BUREAU OF RECLAMATION

Santa Clara Conduit Inspection and Rehabilitation and Pacheco Sectionalizing Valve and Acoustic Fiber Optic Repair Project

CGB-EA-2022-019
Draft Environmental Assessment

U.S. Department of the Interior

March 2022

Mission Statements

The U.S. Department of the Interior protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated Island Communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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Section 1. Introduction

1.1 Background

On August 27, 1967, under Public Law 90-72, Congress authorized the Secretary of the Interior to "construct, operate, and maintain, as an addition to, and integral part of the Central Valley Project, California, the San Felipe division." The Bureau of Reclamation (Reclamation) has a non-discretionary obligation to continue to meet its Congressionally authorized Project purposes. Only Congressional actions to de-authorize the structures can alter or terminate this responsibility and thereby allow the operation and maintenance of the structures to cease.

Completed in 1988, the San Felipe Division of the Central Valley Project (CVP) encompasses the Santa Clara Valley in Santa Clara County, the northern portion of San Benito County, the southern portion of Santa Cruz County, and the northern edge of Monterey County. The San Felipe Division supplies CVP water to Santa Clara Valley Water District (Valley Water) and San Benito County Water District (SBCWD).

Since January 1, 1988, Reclamation has provided CVP water to Valley Water pursuant to a long-term water service contract (Contract No. 7-07-20-W0023). Upon the request of Valley Water, the water service contract was converted into a repayment contract on June 28, 2021 (Contract No. 7-07-20-W0023AB-P) pursuant to Section 4011 of the Water Infrastructure Improvements for the Nation Act (WIIN Act; Public Law 114-322, 130 Stat. 1628). Section 4011 of the WIIN Act directs, through non-discretionary actions, Reclamation to convert water service contracts to repayment contracts upon a contractor's request.

1.1.1 San Felipe Division Facilities Operated and Maintained by Santa Clara Valley Water District

Since 1988, Valley Water has operated and maintained certain San Felipe Division facilities (San Felipe Reach 1, Reach 2, and Reach 3) pursuant to contracts with Reclamation. Current operation and maintenance activities by Valley Water are addressed in Contract No. 7-07-20-W0023AB-P. Routine maintenance, rehabilitation, and condition assessment of the facilities are necessary to ensure that San Felipe Division facilities continue to operate as Congressionally authorized and mandated under Public Law 90-72. More than two million people within Santa Clara County are reliant on the CVP water supplies provided by the San Felipe Division.

The San Felipe Reach 1 transmission system is located downstream from the Pacheco Pumping Plant and includes the Pacheco Tunnel Reach 2, a 114-inch reinforced concrete-lined tunnel, and the Pacheco Conduit, a 13.3 mile, 120-inch pre-stressed concrete cylinder pipe (Figure 1). In Pacheco Tunnel Reach 2, water flows approximately 5.2 miles to the Pacheco Sectionalizing Valve. Water then flows approximately 7.9 miles in the Pacheco Conduit to the bifurcation structure. At the bifurcation structure, water travelling through the Pacheco Conduit is split, with a portion of the water travelling to San Benito County, through the Hollister Conduit, and the remaining water traveling to Santa Clara County through the San Felipe Reach 2 transmission system.

The San Felipe Reach 2 transmission system, downstream of the bifurcation structure, includes the Santa Clara Conduit, a 22 mile, 96-inch pre-stressed concrete cylinder pipe, and the Santa Clara Tunnel, a 102-inch reinforced concrete-lined tunnel. Water travels for one mile through the Santa Clara Conduit to the Santa Clara Tunnel where it travels for one mile before re-entering the Santa Clara Conduit. The water then travels approximately 21-miles in the Santa Clara Conduit to the Coyote Pumping Plant in Morgan Hill, California (Figure 2) transitioning from San Felipe Reach 2 to San Felipe Reach 3 (Figure 3).

The Pacheco Conduit has no turnouts (areas where water is supplied from the pipelines on a regular basis). The Santa Clara Conduit has three turnouts. Turnouts are at the San Pedro Ponds (groundwater recharge facilities), Half Road/Madrone (groundwater recharge facility), and adjacent to San Felipe Road at Highway 152 (an apple orchard).

The pipelines have five isolatable sections and can be drained at 29 discharge points into existing water bodies at a maximum discharge rate of 56 cubic feet per second (cfs). The first isolatable section is the Pacheco sectionalizing valve on the Pacheco Conduit south of Pacheco Reservoir on the south side of Highway 152 (Figure 1). Major vault locations along the Santa Clara Conduit include the bifurcation structure (BIF) near Casa De Fruta Parkway and Highway 152, Calaveras Fault inlet (CFI) and Calaveras Fault outlet (CFO) next to Pacheco Creek, Santa Clara Conduit sectionalizing valve 1 (SV1) near Leavesley Road, west of Highway 152 in Gilroy, and Santa Clara Conduit sectionalizing valve 2 (SV2) near San Martin Avenue in Morgan Hill (Figures 2 and 3).

In 2006, Valley Water developed a multi-year pipeline maintenance program (PMP) that addressed the maintenance and repair of the water supply conveyance systems under Valley Water's jurisdiction including the Santa Clara and Pacheco Conduits and their appurtenances (Valley Water 2007). Valley Water maintains these facilities pursuant to the PMP which was analyzed in a 2007 Program Environmental Impact Report (SCH#2005101047) (PMP PEIR). The PMP PEIR has since been renewed by Valley Water through November 2022 (Valley Water 2017).

In 2015, Reclamation reviewed a Valley Water proposal that was similar to that described in this Draft EA, including dewatering, inspection, maintenance, or rehabilitation the Pacheco Conduit, Santa Clara Conduit, and Santa Clara Tunnel. Reclamation analyzed impacts to air quality, biological resources, global climate change, and water resources. In its review, Reclamation found that there would be only temporary impacts to air quality, which would not surpass thresholds that would cause potential impacts to global climate change. Water resources, including groundwater resources, were also found to be only temporarily impacted and implementation of Best Management Practices (BMPs) would prevent potential impacts to waterways. Additionally, water service to Valley Water's customers (including SBCWD) would only be temporarily impacted and other sources of water would be available during project activities. Finally, BMPs would reduce or avoid potential impacts to biological resources in the Action area. A Finding of No Significant Impact (FONSI) was signed on May 12, 2017. The FONSI and EA (Reclamation 2017) are hereby incorporate by reference.

On August 1, 2015, a catastrophic rupture of the Santa Clara Conduit occurred between the bifurcation structure and the entrance to the Santa Clara Tunnel. Fortunately, the rupture occurred in a rural area and there were no injuries or loss of life. However, due to drought conditions and the imminent threat to public health and safety within portions of Santa Clara County and San Benito County that are solely reliant on the water supply from this facility, Santa Clara declared an emergency and conducted preliminary excavations above and below the rupture to assess the

damage and determine if additional areas of the pipe needed to be repaired. During this inspection, two other sections of the pipe downslope of the rupture were found to be damaged. Valley Water repaired these sections by replacing the damaged sections with new concrete-reinforced pipe.

Valley Water has proposed to conduct routine maintenance, rehabilitation, and condition assessment of the Santa Clara Conduit, Santa Clara Tunnel, and Pacheco Tunnel. These actions are necessary to ensure that these San Felipe Division facilities continue to safely transport CVP water between the San Luis Reservoir and Santa Clara and San Benito Counties and to prevent further catastrophic breaches that pose threats to public health and safety.

1.2 Purpose and Need for the Proposed Action

Routine maintenance, rehabilitation, and condition assessment of the facilities are necessary to ensure that the Santa Clara Conduit, Santa Clara Tunnel, Pacheco Tunnel, Pacheco Conduit, and all associated appurtenances continue to safely transport water between the San Luis Reservoir and Santa Clara County. These maintenance activities are needed for Valley Water to meet its obligations for reliable water service and delivery.

Figure 1. Proposed Action Area from Pacheco Tunnel to Pacheco Conduit

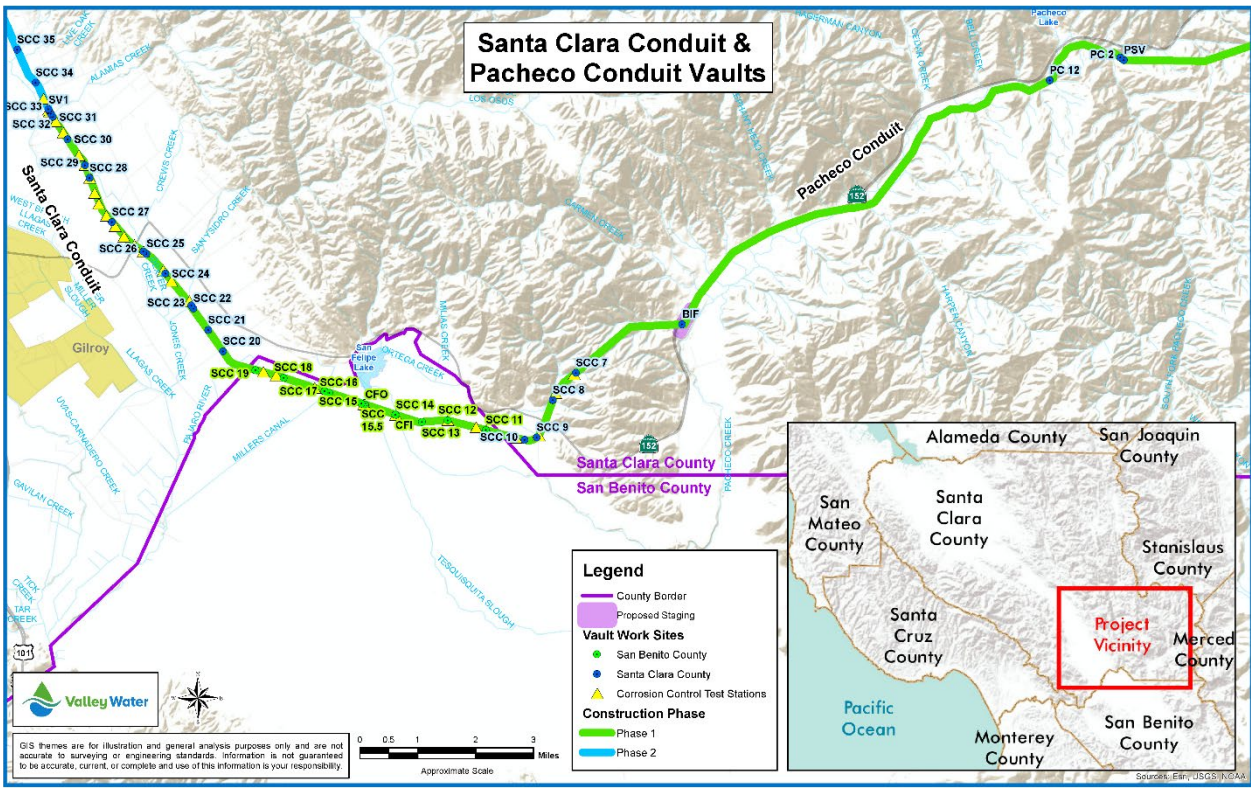

Figure 2. Proposed Action Area from Pacheco Sectionalizing Valve to Sectionalizing Valve 1

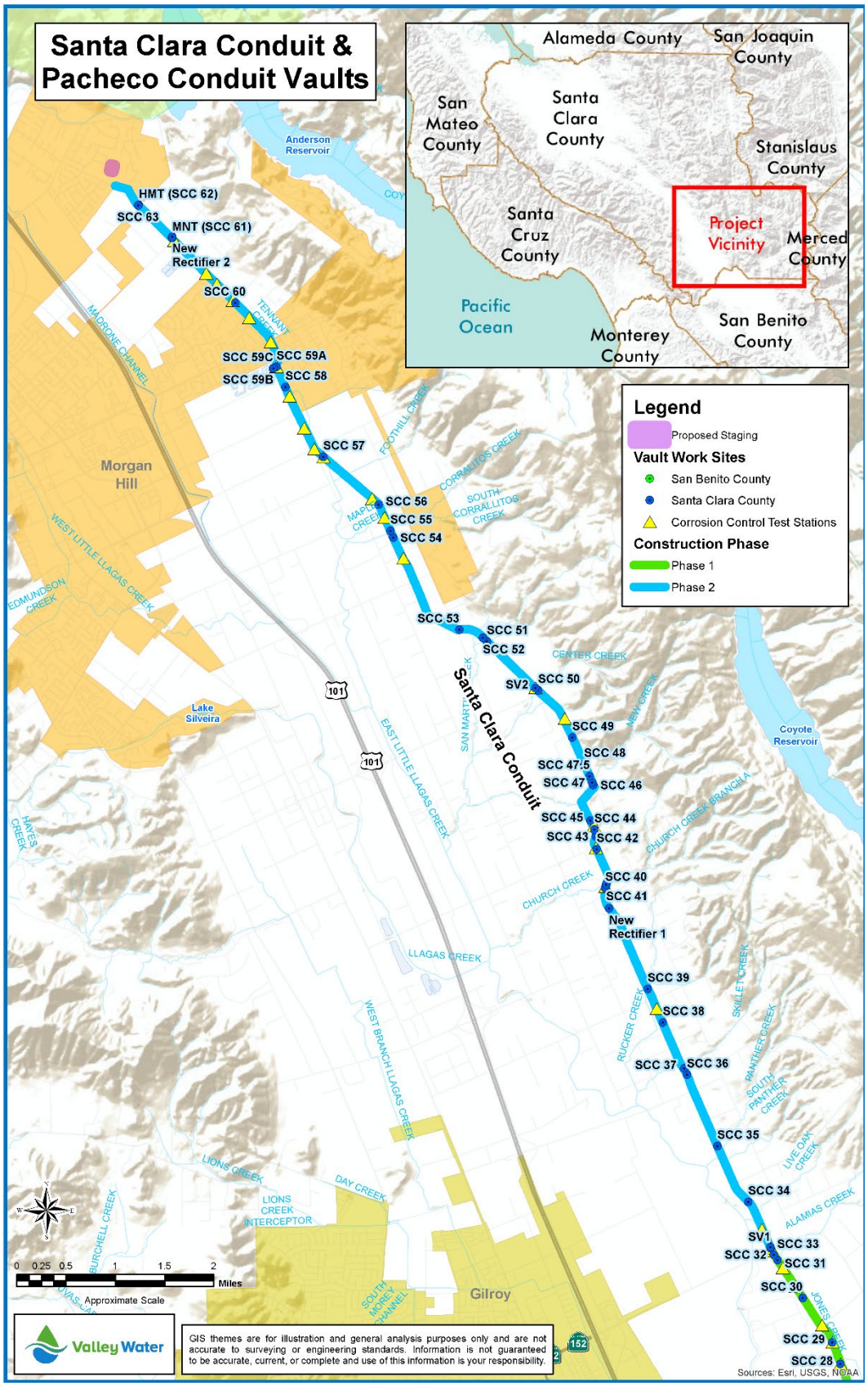

Figure 3. Proposed Action Area from Sectionalizing Valve 1 to Coyote Pump Station

Section 2. Alternatives Including Proposed Action

This EA considers two possible actions: the No Action Alternative and the Proposed Action. The No Action Alternative reflects future conditions without the Proposed Action and serves as a basis of comparison for determining potential effects to the human environment.

2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not authorize Valley Water to inspect, maintain, or rehabilitate the Santa Clara Conduit and Tunnel, the Pacheco Conduit, or the Pacheco Tunnel and Tank. Reclamation would also not authorize inspection of the Pacheco Tunnel and Pacheco Tank, or repairs and valve replacements at the Pacheco sectionalizing valve vault structure. Valley Water's ability to provide water to both the Santa Clara Valley and the SBCWD would be severely compromised if the Santa Clara Conduit, Santa Clara Tunnel, Pacheco Conduit, or Pacheco Tunnel were to fail. Without valve replacement and repair work at the Pacheco sectionalizing valve, Valley Water would not be able to mitigate potential leaks nor conform with its agreements with Reclamation.

2.2 Proposed Action

Valley Water, on Reclamation's behalf pursuant to Contract No. 7-07-20-W0023AB-P, proposes to inspect, maintain, or rehabilitate the Santa Clara Conduit, as well as make valve replacements and acoustic fiber optic (AFO) repairs within the Pacheco sectionalizing valve vault structure and two Pacheco Conduit vaults (see Appendix A for specific activities proposed for individual vault locations). General activities include:

- Draining of the conduits and tunnels
- Internal inspection and assessment
- Internal pipeline repairs as needed
- Leak repair
- Air Release Valve Maintenance
- Cathodic protection/corrosion control and monitoring
- Installation of additional in-vault cathodic protection test stations and two rectifiers for cathodic protection.
- Installation of gas-powered back-up generators to support electronically actuated line valves.
- Repair of pipeline segments
- Replacement/repair of appurtenances (e.g., fittings, manholes, meters, seals, blow-off valves, air release valves etc.)
- Replace interior ladders and
- Install exterior ladders
- Vault maintenance

- Telemetry cable/Supervisory Control and Data Acquisition (SCADA) inspection and repairs
- Acoustic fiber optic monitoring equipment installation/replacement
- Access road repairs and temporary fencing

The Proposed Action would be completed in two phases that involve two separate shutdowns to dewater the pipelines over an anticipated two-year period. Phase 1 is expected to begin late spring 2022 and Phase 2 is expected to begin in late summer 2023. Due to unforeseen circumstances or ongoing drought conditions, the timing of implementation of the Proposed Action may be moved back a year or more but would still be implemented with the same phasing and actions as described herein.

2.2.1 Dewatering

Conduit dewatering would occur between November 1 - 16 during each Phase. The winter period was selected to minimize effects to the receiving water bodies, to mimic the period of normal stormwater runoff, and to reduce water supply impacts to those solely reliant on this system for their water supply.

Before any pipeline maintenance or inspection would be able to begin, the Santa Clara Conduit and Tunnel, and the Pacheco Conduit and Tunnel would be isolated (lockout/tagout), raw water deliveries halted, and the pipelines dewatered to provide safe access. Lockout/tagout would be done at the following: Santa Clara Conduit at the bifurcation structure (primary and secondary valves), Pacheco Pumping Plant, Pacheco Conduit and Tunnel at Pacheco sectionalizing valve, Santa Clara Conduit at SV2, Santa Clara Conduit at SV1, Santa Clara Conduit at the CFO, and Santa Clara Conduit at CFI.

The pipelines would discharge via gravity into various streams (i.e., creek, river, canal), two ditches, and two percolation ponds during dewatering as indicated in Table 1 and Table 2. Any water that does not discharge through gravity flow would be discharged via internal pump out to the nearest stream or ditch.

Table 1. Phase 1 Dewatering and Discharge Summary

Vault	Discharge Location	Discharge Hours	Discharge Volume (gallons)	Discharge Rate (cfs)	County	Latitude	Longitude
Pacheco Tunnel	Pacheco Tank and San Luis Reservoir	N/A	N/A	N/A	Merced	37.061869 N	121.181402 W
PC2	Pacheco Creek	11.9	640,751	2	Santa Clara	37.042967 N	121.273133 W
PC12	Pacheco Creek	104.2	2,806,501	2	Santa Clara	37.038200 N	121.290828 W
SCC9	Pacheco Creek	1.2	31,358	1	Santa Clara, discharges to San Benito	36.959819 N	121.419003 W

Vault	Discharge Location	Discharge Hours	Discharge Volume (gallons)	Discharge Rate (cfs)	County	Latitude	Longitude
SCC CFI	Pacheco Creek	(77.27[1] + 89.4[1]) = 166.67[1] [11.2[2]]	(10,403,018[1] + 4,808,953[1]) = 15,211,971[1] [1,807,637[2]]	5[1], 2[1], [6[2]]	San Benito	36.971933 N	121.453986 W
SCC16	Millers Canal	(92.82[1] + 3.9[1] + 66.5[1]) = 163.22[1] [11.2[2]]	(4,998,918[1] + 105,501[1] + 3,575,698[1]) = 8,680,117[1] [1,807,637[2]]	2[1], 1[1], 2[1], [6[2]]	San Benito	36.976278 N	121.470883 W
SCC19	Agricultural ditch draining to Pajaro River	34.5	928,845	1	San Benito	36.980767 N	121.489189 W
SCC23	San Ysidro Creek	4.0	107,469	1	Santa Clara	36.993631 N	121.505350 W
SCC26	Jones Creek	(33.56[1] + 11.9[1]) = 45.46[1]	(1,807,637[1] + 319,328[1]) = 2,126,965[1]	2[1], 1[1]	Santa Clara	37.004333 N	121.517406 W
SCC29	Jones Creek	12.8	345,384	1	Santa Clara	37.021511 N	121.531894 W
SCC32	Jones Creek	5.8	156,994	1	Santa Clara	37.031903 N	121.539367 W
SCC SV1	Llagas Creek	0.5	25,953	2	Santa Clara	37.031389 N	121.543547 W
San Pedro Turnout SCC59	San Pedro Ponds	122.38	3,295,314	1	Santa Clara	37.135636 N	121.614281 W
Main Ave. Turnout	Main Ave. Ponds	11.75	1,265,923	4	Santa Clara	37.148639 N	121.628550 W
Coyote Polyjet	Coyote Creek	39.42	16,985,227	16	Santa Clara	37.164844 N	121.636014 W

[1]Includes separate and combined gravity and internal pump out – for the SCC CFI nozzle pump out is included as a third category.

[2]Additional Drainage from CFI to SCC16 (Dissipater) if SV2 leaks.

Table 2. Phase 2 Dewatering and Discharge Summary

Vault	Discharge Location	Discharge Hours	Discharge Volume (gallons)	Discharge Rate (cfs)	County	Latitude	Longitude
SCC CFI	Pacheco Creek	113.0	15,218,232	5	San Benito	36.971933 N	121.453986 W
SCC SV1	Llagas Creek	0.5	25,953	2	Santa Clara	37.031389 N	121.543547 W
SCC35	Llagas Creek	11.0	590,027	2	Santa Clara	37.042617 N	121.536825 W
SCC37	Skillet Creek	2.9	154,218	2	Santa Clara	37.053831 N	121.553764 W

Vault	Discharge Location	Discharge Hours	Discharge Volume (gallons)	Discharge Rate (cfs)	County	Latitude	Longitude
SCC39	Rucker Creek	11.3	605,979	2	Santa Clara	37.062967 N	121.558997 W
SCC41	Church Creek	6.6	357,759	2	Santa Clara	37.075197 N	121.565042 W
SCC47	New Creek	13.5	728,356	2	Santa Clara	37.087169 N	121.567083 W
SCC50	Center Creek	1.1	56,750	2	Santa Clara	37.097683 N	121.575072 W
SCC51	San Martin Creek	1.6	86,460	2	Santa Clara	37.103783 N	121.582656 W
SCC53	Roadside v-ditch	47.4	2,553,548	2	Santa Clara	37.104914 N	121.582333 W
SCC55	Corrallitos Creek	65.8	3,542,789	2	Santa Clara	37.116467 N	121.596678 W
SCC57	Tennant Creek	19.7	1,060,930	2	Santa Clara	37.125283 N	121.606656 W
SCC58	Tennant Creek	2.5	135,719	2	Santa Clara	37.133481 N	121.612094 W
San Pedro Turnout SCC59	San Pedro Ponds	40.8	3,295,314	3	Santa Clara	37.135636 N	121.614281 W
Main Ave. Turnout	Main Ave. Ponds	12.0	1,265,923	4	Santa Clara	37.165306 N	121.628550 W

Discharges to streams would occur by gravity-release and internal pumping of the water from the pipelines using temporary discharge measures and/or existing hard infrastructure. Temporary discharge measures, plastic sheeting spillways, would be used at sites to prevent erosion where existing infrastructure is absent or where existing infrastructure is present but was determined to be inadequate to prevent erosion during previous dewatering events. All plastic sheeting spillways would consist of wattles/gravel bags to contain the water within the spillway and plastic sheeting to line the spillways and prevent erosion. At sites lacking existing infrastructure, temporary hoses would be used to pump the water from the adjacent vault to a geotextile bag and plastic sheeting spillways where needed.

During pipeline draining, wedge wire screens (<5 millimeters) would be placed over the discharge openings of gravity drain gates, and on the suction and discharge piping of any submersible pumps used for pipeline discharge to receiving streams to avoid and minimize discharge of non-native species into receiving streams, and to prevent entry or entrapment of rearing juvenile salmonids during pipeline draining.

Dewatering under the Proposed Action would include monitoring of the discharge rate and implementation of various BMPs (Appendix B) to prevent scour or erosion to receiving streams. Controlled discharge rates and temporary protection measures (e.g., plastic sheeting spillways,

dissipater bags, and flow-directing fish screens), would be used to direct discharge to avoid scour at each of the dewatering locations.

Maximum channel discharge capacities are not known for the discharge creeks. BMPs, avoidance and minimization measures, and mitigation measures (collectively, "conservation measures") are included in Appendix B and would be implemented during and prior to the discharge to further reduce the risk of localized flooding, erosion, and adverse impacts to receiving water bodies. Pre-construction site visits would be conducted to check on each receiving water body (i.e., stream or percolation pond) and its integrity. During the discharge itself, Valley Water contractors, pipe mechanics, construction inspectors, biologists, etc., would be on-site and available to report out the need to shut down a site if a stream appeared to be reaching capacity, or the discharge caused erosion, or would adversely impact water quality.

Dewatering would include multiple gravity discharge, internal pump-out points, and combined gravity and internal pump outs. The water that does not discharge through gravity flow would be pumped out using sound-attenuated and screened pumps to completely empty the pipeline, and discharge water via pump-out to the nearest stream or ditch. Pump-out locations require a direct connection of the pump, powered by an on-site generator, to a fitting on the pipeline appurtenance. Layflat hose conveys the water from the pipeline, through screened pumps, to the plastic sheeting spillway, and into the receiving stream or ditch. When the water level in the pipe is low, the vault lids are removed and a suction hose from the pump lowered down inside the pipeline to reach the targeted water.

Due to logistics and scheduling (Lockout/Tagout), dewatering activities would continue through precipitation events. All dewatering activities would be overseen by biologists who will be responsible for the water quality monitoring during pipeline releases.

Gravity dewatering at all sites would discharge simultaneously during each phase. After gravity dewatering is completed, pump out at all sites of each phase would be discharged programmatically/sequentially.

There would be at least 3.5 days of night work for two locations during gravity discharge (occurring simultaneously):

- CFI – gravity discharge would take 77.27 hours
- SCC16 – gravity discharge would take 92.82 hours
- Because all gravity sites would discharge simultaneously, CFI and SCC16 would have a total of 3.5 nights of work for both sites.

The pump out sequence and durations would be up to the contractor but there are three sites with more than a half day of pump out that could also result in night work:

- CFI – pump out would take 89.4 hours and could have 0 to 3.5 nights depending on whether the contractor only pumps out during the day or pumps 24 hours/day)
- SCC16 – pump out would take 66.5 hours and could have 0 to 2.5 nights depending on whether the contractor only pumps out during the day or pumps 24 hours/day)
- SCC19 – pump out would take 34.5 hours and could have 0 to 1 night depending on whether the contractor only pumps out during the day or pumps 24 hours/day)

In total, if contractor pumps out 24 hours/day simultaneously, this would be a total of 3.5 nights. If the contractor pumps out 24 hours/day sequentially, this would be a total of 6 nights.

Phase 1 Dewatering

Phase 1 would involve complete dewatering of the Santa Clara Conduit from the bifurcation station to SV1, and partial dewatering from SV1 to SV2. The water between SV1 and SV2 would only require gravity dewatering to the dewatering locations during this phase. Phase 1 also includes work on the Pacheco Conduit that would require partial dewatering of the Pacheco Conduit from the Pacheco sectionalizing valve to vault PC12 and dewatering through vaults PC2 and PC12. Phase 1 Shutdown would discharge approximately 54,416,410 gallons (includes Pacheco Conduit discharge of 3,447,252 gallons); does not include water volume returned to San Luis Reservoir from the Pacheco Tunnel.

The Pacheco Tunnel would be dewatered, and raw water would be drained from the tunnel to the Pacheco Tank (at Pacheco Pumping Plant), and then to the San Luis Reservoir where it originated. Once lockout/tagout is complete for all pipelines, any standing water in the Pacheco Tunnel would be drained into the Pacheco Tank using an 80-horsepower diesel pump. Water within the tank would return (drain) to San Luis Reservoir via the existing pipeline between the reservoir and Pacheco Pumping Plant.

Approximately 3.5 million gallons would be discharged from the Pacheco Conduit during the Phase 1 shutdown. The Pacheco Conduit would be partially dewatered by discharging from PC2 and PC12 into the adjacent Pacheco Creek. Valley Water would utilize a maintenance truck with small lift equipment and existing facilities to slowly gravity drain the water into the Pacheco Creek. Remaining portions of water would be drained by the contractor using sound-attenuated pumps to minimize environmental disturbance.

Dewatering of the Santa Clara Conduit for Phase 1 occurs simultaneous to dewatering PAC2 and PAC12 for the Pacheco Conduit. Approximately 51 million gallons would be discharged from the Santa Clara Conduit during the Phase 1 shutdown. The water between SV1 and SV2 would only require gravity dewatering via the gravity dewatering locations. The water that does not discharge through gravity flow would be discharged via pump-out or internal pump-out to the nearest stream or ditch. To conduct a pump-out, a hose would be placed in the pipe from the ground surface to pump out the water. To conduct internal pump-out, personnel would enter the pipe to place the pump-out hose.

Phase 2 Dewatering

Phase 2 would involve dewatering the second half of the Santa Clara Conduit, from SV1 to the Coyote Pumping Plant, including complete dewatering between SV1 and SV2 (gravity + internal pump-out). Phase 2 Shutdown would discharge approximately 32,021,375 gallons. Like Phase 1, Santa Clara Conduit has multiple gravity discharge locations and water that does not discharge through gravity flow would be discharged via pump-out or internal pump out to the nearest stream or ditch.

Dewatering and Discharge Procedure

The procedure for discharge (e.g., volume, rate, and time) depends on the area of discharge. At the beginning of the pipeline releases, discharge rates would be ramped up slowly such that the increase in flow rate in the receiving waters is gradual and scouring does not occur. At the end of the pipeline

dewatering discharge rates would slowly ramp down such that the decrease in flow rate in the receiving water is gradual to prevent the potential of fish stranding.

2.2.2 Inspection and Maintenance Activities

Once dewatering is complete, Valley Water would implement the specific inspection, maintenance, and rehabilitation activities for individual vault locations as described in Appendix A.

Following dewatering, the Proposed Action would include inspections, appurtenance rehabilitation, maintenance and repair activities, installation of a structural lining in the pipe, installation of AFO monitoring equipment, and installation of improvements which would help to protect the existing infrastructure and facilitate future maintenance. A confined space rescue contractor and radio communications contractor would provide additional support during the inspection and repairs. Fans would be on-site to provide adequate ventilation for the inspection team. Work crews would then access the pipeline through existing in-vault appurtenances and nozzles, utilizing trucks and small lift equipment.

A Valley Water electromagnetic inspection consultant would walk and inspect the Santa Clara Conduit. No electromagnetic inspection would occur on the Santa Clara Tunnel, Pacheco Tunnel, nor Pacheco Tank. Visual internal inspection would be conducted at Santa Clara Conduit, Santa Clara Tunnel, and Pacheco Tunnel and Tank. Portions of the Pacheco Conduit would be dewatered for inspection for fiber optic repair. Visual internal inspection consists of walking inside the pipe and visually examining the structure for any cracks or damage and noting condition.

The findings from the inspection would be used to determine the condition of the pipeline and the repair strategy/plan. Minor internal repairs such as welding steel plates and cement mortar patching would be performed by the pipeline maintenance contractor. Internal repairs may also include installation of rubber seals and internal carbon fiber reinforcement where appropriate. The seal used is a circular rubber ring that is the same diameter as the conduit and is held in place by an expandable metal ring and pressurized against the interior diameter of the pipe. Some in-pipe repair may also involve welding of pipe joints as needed. An on-site generator and ventilation system would be installed if welding inside the pipe is needed. If the internal inspection suggests a need for major repairs, further evaluation and corrective measures may require additional analysis prior to implementation or would be addressed in the future.

Refilling the conduit after maintenance, inspection, and repair would be conducted in accordance with standard Valley Water procedures for returning pipelines back into service. Valley Water would seal and bolt up all pipeline openings upon refilling the pipeline and monitor the refilling process. Any pipeline appurtenances found to be leaking and/or faulty under working pressure would be repaired immediately.

Upon refilling, the pipeline water would be available immediately to provide needed water supplies as it has since 1988.

2.2.3 Access and Staging

The pipeline would be accessed through existing in-vault appurtenances and nozzles, utilizing trucks and small lift equipment. Access would be provided on paved local roads, unpaved Valley Water access roads, and through open agricultural fields (i.e., row crops) with no roads.

Access repairs and temporary fencing may be needed. Temporary fencing would include temporary pin flags and/or wooden stakes with flagging used to demarcate project boundaries around suitable habitat where existing property fencing is absent.

At some work areas, existing fences may need to be temporarily removed to permit access. Interim gates and/or fencing would be installed at some locations to prevent unauthorized entry to the work area. The interim gates would be removed at the end of project activities and would not require excavation or ground disturbance for installation of removal.

If the access roads and terrain become unstable due to wet weather conditions, composite mats may be set and used to provide a safe, continuous, solid surface for vehicles on-site. The composite mats are temporary and would be removed at the end of project activities.

Prior to the start of the maintenance activities, Valley Water staff may need to conduct minor site and road preparation work to gain access and repair vulnerable areas along the pipeline. Restoration of minor damage to landscaping, property fixtures (i.e., fences) and roads may be required. After the pipeline is refilled and back in service, Valley Water and contracted staff would complete any site restoration work as needed, but would occur only in upland areas, and would not require mitigation monitoring.

Pipeline access vaults and two excavation sites would be offset from a paved road or access road requiring a 10-foot-wide pathway to the vault or excavation site for vehicles and equipment. Existing access roads are assumed to be 10-feet wide. A maximum 50-foot diameter work area, from center of vault, would be required for access and work around all vault sites. At most vault sites, particularly in San Benito County, work areas would be smaller due to fencing, ditches, or wetlands/rare plants to avoid all incumbered and sensitive areas. Therefore, many locations would be half-circle work areas without surrounding the entire vault. Construction access for the two new rectifier installations would also require a 50-foot buffer around each installation site.

Staging of equipment and materials would occur at two primary staging areas that have been used by Valley Water in the past:

Phase 1 Staging Areas:

- Staging Area #1 – Near Casa De Fruta at the Bifurcation Station. The Bifurcation Station and surrounding area cover approximately 450,000 square feet and is secured by a gate.
- Additionally, crews would stage on hardened surfaces at the Pacheco Pumping Plant and the Pacheco sectionalizing valve. The Pacheco Pumping Plant is accessed off Dinosaur Point Road and is about 20 miles east of Gilroy, California. The Pacheco sectionalizing valve vault is accessed off Highway 152 over existing roads.

Phase 2 Staging Area:

- Staging Area #2 – Coyote Pump Station. The Coyote Pump Station is approximately 447,000 square feet and is secured by a gate.

2.2.4 Environmental Commitments

Valley Water shall implement the environmental protection measures included in Table 3.

Table 3 Environmental Protection Measures and Commitments

Resource	Protection Measure
Various Resources	All BMPs, mitigation measures, and avoidance and minimization measures (collectively, "conservation measures") described in Appendix B shall be followed for activities associated with the Proposed Action. Additionally, the terms and conditions to the National Pollutant Discharge Elimination System permit and Lake and Streambed Alteration permits provided to Valley Water must be adhered to.
Biological Resources	All applicable measures described in the Santa Clara Valley Habitat Plan (SCVHP) shall be followed for activities associated with the Proposed Action.
Biological Resources	All reasonable and prudent measures and associated terms and conditions of the U.S. Fish and Wildlife Service biological opinion (Appendix C) shall be implemented.

Environmental consequences for resource areas assume the measures specified would be fully implemented.

Section 3. Affected Environment and Environmental Consequences

3.1 Resources Eliminated from Further Analysis

Reclamation analyzed the affected environment and determined that the Proposed Action did not have the potential to cause adverse effects to the following resources:

Indian Trust Assets

Indian Trust Assets are legal interests in assets that are held in trust by the United States for federally recognized Indian tribes or individuals. There are no Indian reservations, rancherias or allotments in the Proposed Action area. The nearest Indian Trust Asset is a public domain allotment which is about 21 miles to the south of the Proposed Action. The Proposed Action does not have a potential to affect Indian Trust Asset.

Indian Sacred Sites

Executive Order 13007 (May 24, 1996) a requires that federal agencies accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and avoids adversely affecting the physical integrity of such sacred sites. The Proposed Action is temporary in nature and would not affect or prohibit access to and ceremonial use of Indian sacred sites.

Environmental Justice

Executive Order 12898 requires each federal agency to identify and address disproportionately high and adverse human health or environmental effects, including social and economic effects of its program, policies, and activities on minority populations and low-income populations. Based on a review of environmental health databases, census data, and other demographic information, Reclamation has not identified adverse human health or environmental effects on any population because of implementing the Proposed Action. Therefore, implementing the Proposed Action could

not have a significant or disproportionately negative impact on low-income or minority individuals within the Proposed Action area.

Land Use/Planning
The Proposed Action would not change land use in the Action area.

Recreation
The Proposed Action would not affect recreation sites in the Action area.

3.2 Air Quality

Section 176 (C) of the Clean Air Act (42 U.S.C. 7506 (C)) requires any entity of the federal government that engages in, supports, or in any way provides financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable State Implementation Plan required under Section 110 (a) of the Federal Clean Air Act (42 U.S.C. 7401 [a]) before the action is otherwise approved. In this context, conformity means that such federal actions must be consistent with State Implementation Plan's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards and achieving expeditious attainment of those standards. Each federal agency must determine that any action that is proposed by the agency and that is subject to the regulations implementing the conformity requirements would, in fact conform to the applicable State Implementation Plan before the action is taken.

On November 30, 1993, the Environmental Protection Agency (EPA) promulgated final general conformity regulations at 40 CFR 93 Subpart B for all federal activities except those covered under transportation conformity. The general conformity regulations apply to a proposed federal action in a non-attainment or maintenance area if the total of direct and indirect emissions of the relevant criteria pollutants and precursor pollutant caused by the Proposed Action equal or exceed certain *de minimis* amounts thus requiring the federal agency to make a determination of general conformity.

3.2.1 Affected Environment

As described in the EA-15-059 (previously incorporated by reference), the Proposed Action area lies within the boundaries of two air districts, the San Francisco Bay Air Basin under the jurisdiction of the Bay Area Air Quality Management District and the North Central Coast Air Basin under the jurisdiction of the Monterey Bay Unified Air Pollution Control District. The San Francisco Bay Air Basin is currently in nonattainment for the national ozone and fine particulate matter ($PM_{2.5}$) standards, as well as the California ozone, inhalable particulate matter (PM_{10}) and $PM_{2.5}$ standards. The area is in attainment for the state and federal carbon monoxide standards. The North Central Coast Air Basin is currently in nonattainment for the California ozone and inhalable particulates (PM_{10}) standards. Status for the Proposed Action area is described as unclassified/attainment for both the state and federal carbon monoxide (CO_2) standards.

3.2.2 Environmental Consequences

No Action

Under the No Action Alternative, the Pacheco Conduit, Tunnel, and Tank, and the Santa Clara Conduit and Tunnel would continue to be operated in their existing conditions. There would be no change in air emissions.

Proposed Action

The operation of construction machinery associated with the Proposed Action would result in short-term emissions of air pollutants. The California Emissions Estimator (CalEEMod), Version 2020.4.0, was used to estimate construction and operational (vehicle trips) emissions. The modeling results are provided in Table 4.

Construction emissions are estimated to be below the thresholds established by both Air Districts during the schedule for the Proposed Action (Table 4). In addition, once construction is complete, the pipeline would be operated in the same way as it has in the past. Therefore, no changes in operational emissions would occur as a result of the Proposed Action and there would be no adverse impacts to air quality.

Table 4. Calculated Proposed Action Unmitigated Total Annual Emissions

Activity	Activity dates	ROG (tons)	CO (tons)	NO_x (tons)	PM_{10} (tons)	$PM_{2.5}$ (tons)	CO_{2e} (Metric Tons)
Site preparation, dewatering activities, and maintenance activities	August through December 2022	0.0566	0.5306	0.5515	0.0343	0.0282	93.5
Annual total 2022		0.0566	0.5306	0.5515	0.0343	0.0282	93.5
Dewatering activities, maintenance activities, and site restoration activities	July 26 through December 31 2023	0.1010	0.8358	0.9216	0.0574	0.0405	170.8
Annual total 2023		0.1010	0.8358	0.9216	0.0574	0.0330	170.8
Maintenance activities and site restoration activities	January through May 2024	0.0483	0.3433	0.3985	0.0280	0.0163	80.8
Annual total 2024		0.0483	0.3433	0.3985	0.0280	0.0163	80.8
Bay Area Air Quality Management District Thresholds (per year)		**15**	**NA**	**15**	**15**	**15**	**1,100**

Cumulative Impacts

Construction-related emissions are considered temporary, and do not exceed the Air Districts' thresholds of concern, and therefore cumulative adverse effects would not occur. Since long-term operational emissions would be unchanged as a result of the Proposed Action, they also would not contribute to cumulative air quality impacts.

3.3 Biological Resources

The Proposed Action area within Santa Clara County is located in the plan area for the Santa Clara Valley Habitat Plan (SCVHP). The SCVHP (Santa Clara Valley Habitat Agency 2012, 2013) is a joint Habitat Conservation Plan and Natural Communities Conservation Plan developed to serve as the basis for issuance of incidental take permits and authorizations pursuant to Section 10 of the federal Endangered Species Act (ESA) and California Natural Community Conservation Planning Act. As a Permittee of the SCVHP, Valley Water's proposed activities within Santa Clara County are activities identified and covered in the SCVHP and must be implemented consistent with those requirements outlined in the SCVHP. The impacts of general construction activities within the SCVHP plan area were previously evaluated at a programmatic level in the Santa Clara Valley Habitat Plan Final Environmental Impact Report/Environmental Impact Statement, August 2012 (USFWS 2012a, 2012b).

The Proposed Action area also includes vault sites, pipeline dewatering sites, and receiving streams in San Benito County and facilities at the Pacheco Pumping Plant in Merced County. Neither San Benito County nor Merced County are areas included in the SCVHP.

3.3.1 Affected Environment

A species list of federal ESA listed threatened and endangered species and critical habitat that may occur within Proposed Action area was initially obtained from the U.S. Fish and Wildlife Service (USFWS) database (https://ecos.fws.gov/ipac/), and updated on February 10, 2022 (USFWS 2022; Project Code: 2022-0005995) (Table 5). Further, resources listed in the Information Planning and Consultation (IPaC) database included migratory birds, wetlands, and any wildlife refuges that can be found in the Proposed Action area. Reclamation further queried the California Department of Fish and Wildlife, California Natural Diversity Database (CNDDB) for records of protected species within or near the Proposed Action area (CNDDB 2021).

Reclamation requested and received a species list (January 20, 2021, NMFS No: INQ-2021-00004) of ESA listed species under the jurisdiction of the National Marine Fisheries Service (NMFS) that occur in the Action area (also included in Table 5). Additionally, the species list identified essential fish habitat (EFH) for various life stages of fish species managed with the Pacific Coast Salmon Fishery Management Plan (FMP) under the Magnuson-Stevens Fishery Conservation and Management Act. Coyote Creek in Santa Clara County overlaps with Chinook (*Oncorhynchus tshawytscha*) and coho salmon (*Oncorhynchus kisutch*) EFH. While coho salmon have not been known to use Coyote Creek recently, Chinook salmon are often identified in the fish passage monitoring system at the Coyote Percolation Facility (Valley Water 2020) in Coyote Creek.

Table 5. Federally Listed Threatened and Endangered Species

Species	Status[1]	Effects[2] Spp/CH	Potential to occur and summary basis for ESA determination[3]
Mammals			
San Joaquin kit fox (*Vulpes macrotis mutica*)	E	NLAA	**Possible**: May use the Proposed Action area for foraging.
Birds			
California Condor *(Gymnogyps californianus)*	E, CH	NE/NE	**Absent**: Cliffs and foraging habitat lacking in the Proposed Action Area. Critical habitat is outside of the Proposed Action area.
California least tern (*Sterna antillarum browni*)	E	NE	**Absent**: No suitable habitat is available in the Proposed Action area.
Least Bell's vireo (*Vireo bellii pusillus*)	E, CH	NLAA/NE	**Possible:** Could fly over the Proposed Action area during migration, but currently outside of current breeding range. Critical habitat is outside of the Proposed Action area.
Marbled Murrelet (*Brachyramphus marmoratus*)	T, CH	NE/NE	**Absent**: Proposed Action area does not overlap with critical habitat; suitable habitat does not exist in Proposed Action area.
Southwestern willow flycatcher (*Empidonax traillii extimus*)	E, CH	NE/NE	**Absent:** Could fly over the Proposed Action area during migration, but outside of current breeding range; Action area lacks extensive cottonwood-willow riparian forest for breeding. Critical habitat is outside of the Proposed Action area.
Reptiles			
Blunt-nosed leopard lizard *(Gambelia silus)*	E	NE	**Absent**: No suitable habitat in Action area, requires arid grasslands and saltbush scrub.
Amphibians			
California red-legged frog *(Rana draytonii)*	T, CH	LAA/ NLAA	**Present:** Proposed Action area overlaps with critical habitat.
California tiger salamander *(Ambystoma californiense)*	T, CH	LAA/ NLAA	**Present**: Proposed Action area overlaps with critical habitat.
Fish			
Central California Coast Distinct Population Segment (DPS) Steelhead *(Oncorhynchus mykiss)*	T, CH	NLAA/ NLAA	**Present**: Coyote Creek population is present in the Proposed Action area (North Valley). Proposed Action area overlaps with critical habitat.
South-Central California Coast Distinct Population Segment (DPS) Steelhead *(Oncorhynchus mykiss)*	T, CH	NLAA/ NLAA	**Present:** Pajaro River population is present in the Proposed Action area (South Valley). Proposed Action area overlaps with critical habitat.
Delta Smelt *(Hypomesus transpacificus)*	T, CH	NE/NE	**Absent**: The Proposed Action area does not overlap with the San Francisco Bay estuary.
Insects			
Bay checkerspot butterfly (*Euphydryas editha bayensis*)	T, CH	NE/NE	**Absent:** Serpentine soils would be avoided; not found in Proposed Action area
Monarch butterfly (*Danaus plexippus*)	C	NE	**Absent:** Roost sites not known to occur in the Proposed Action area.

Species	Status[1]	Effects[2] Spp/CH	Potential to occur and summary basis for ESA determination[3]
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	T, CH	NE/NE	**Absent:** Elderberry shrubs with stems one inch or greater in diameter at ground level may occur along riparian habitat in the Proposed Action area within dewater sites. However, the Proposed Action area is outside of the range of the Valley elderberry longhorn beetle. Critical habitat is outside of the Proposed Action area.
Crustaceans			
Vernal pool fairy shrimp *(Branchinecta lynchi)*	T, CH	NE/NE	**Absent**: No vernal pools are present within the Proposed Action area.
Flowering Plants			
Contra Costa goldfields (*Lasthenia conjugens*)	E, CH	NE/NE	**Absent:** Grows in vernal pool habitats, no vernal pools in Proposed Action area. Critical habitat is outside of the Proposed Action area.
Coyote ceanothus (*Ceanothus ferrisae*)	E	NE	**Absent:** Serpentine soils would be avoided under the Proposed Action.
Marsh sandwort (*Arenaria paludicola*)	E	NE	**Absent**: Wet areas, such as marsh and bog, would be avoided; not found in Proposed Action area
Metcalf Canyon jewelflower (*Streptanthus albidus* ssp. *albidus*)	E	NE	**Absent:** Serpentine soils would be avoided under the Proposed Action.
Robust spineflower (*Chorizanthe robusta* var. *robusta*)	E. CH	NE/NE	**Absent**: Not found in Project Action area. Critical habitat is outside of the Proposed Action area.
Santa Clara Valley dudleya (*Dudleya setchellii*)	E	NE	**Absent:** Serpentine soils would be avoided under the Proposed Action.
Santa Cruz tarplant (*Holocarpha macradenia*)	T, CH	NE/NE	**Absent**: Not found in Proposed Action area. Critical habitat is outside of the Proposed Action area.
Tiburon paintbrush (*Castilleja affinis* ssp. *neglecta*)	E	NE	**Absent:** Serpentine soils would be avoided under the Proposed Action.

[1] Status = Status of federally protected species protected under the ESA.
E: Listed as Endangered
T: Listed as Threatened
C: Candidate species
CH: Critical Habitat designated for this species.
PCH: Critical Habitat proposed for this species.

[2] Effects = ESA Effect determination for species/critical habitat
NE: No Effect anticipated from the Proposed Action to federally listed species or designated critical habitat
NLAA: Proposed Action Not Likely to Adversely Affect federally listed species and/or designated critical habitat
LAA: Proposed Action Likely to Adversely Affect federal listed species and/or designated critical habitat

[3] Definition of Occurrence Indicators
Present: Species recorded in Action area and suitable habitat present.
Possible: Species recorded in Action area and habitat suboptimal.
Absent: Species not recorded in Action area and suitable habitat absent.

The following information was compiled from Valley Water's project memorandum and SCVHP permanent fee calculator used to comply with the SCVHP and populated with information gathered during a pipeline resource survey performed by a Valley Water biologist (Valley Water 2021):

No Federally listed or proposed plant species were observed near the vaults or along the path of discharge between blow-off vaults and receiving waterways. The plant community is generally a mixture of non-native and native species, but dominated by non-native species, including wild radish (*Raphanus sativa*), black mustard (*Brassica nigra*), thistles (*Centaurea* spp., *Sylibum marianum*, *Carduus pycnocephalus*), hop clover (*Trifolium campestre*), and non-native grasses (including Italian wild rye [*Festuca perennis*], foxtail chess [*Bromus madritensis* ssp *madritensis*], and Mediterranean barley [*Hordeum marinum* ssp *gussoneanum*]). Native plant species in addition to non-natives, with the dominant plants including California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), elderberry (*Sambucus nigra*), and beardless wild rye (*Elymus triticoides*), are more common at vaults higher in the watershed and at higher elevations above the road. Areas along Pacheco Creek have a greater proportion of native vegetation, including typical wetland plants such as willows and rushes (arroyo willow [*Salix lasiolepis*], iris-leaved rush [*Juncus xiphioides*], and dotted smartweed [*Persicaria punctata*]). The vaults closest to Casa de Fruta (SCC37 through SCC42) have the fewest number of plant species and are generally overgrown with tall non-native weeds (or, in the case of vault SCC38, mowed in conjunction with the harvest of adjacent hay fields). No serpentine habitats are located in the Proposed Action area, but there are sycamore alluvial woodland, mixed riparian forest and woodland, and willow riparian forest and scrub habitats. Wetland areas and areas of serpentine soils would be avoided under the Proposed Action.

The grassland habitat/hay fields may provide some denning and foraging habitat for the San Joaquin kit fox (*Vulpes macrotis mutica*), and the riparian habitat, especially the willow riparian forest and scrub habitat, may provide nesting and foraging habitat for the least Bell's vireo (*Vireo bellii pusillus*). Both of these species are Federally listed as endangered. They have not been observed in the Proposed Action area, but both could occur there, and both are addressed in the Valley Water's compliance with the SCVHP memorandum and permanent fee calculator. No critical habitat has been proposed or designated for the San Joaquin kit fox. Critical habitat has been designated for the least Bell's vireo, but it lies well to the south of the Proposed Action area (in Southern California).

The Santa Clara Conduit crosses critical habitat of the Central Population of California tiger salamander (*Ambystoma californiense*). Designated critical habitat East Bay Unit 12 (San Felipe Unit) for the California tiger salamander is present along Highway 152 in the vicinity of San Felipe Lake and Casa de Fruta. The Proposed Action area is within the range of the California tiger salamander, as well as the California red-legged frog (*Rana draytonii*). California red-legged frog is considered likely present within the Proposed Action area in both Santa Clara County and San Benito County. California red-legged frog foraging and dispersal habitat also occur in the Proposed Action area.

Various migratory bird species not Federally listed by the ESA, but protected by the Migratory Bird Treaty Act (MBTA), may use the Proposed Action Area for foraging and nesting. A list of migratory birds that may be present or may breed in the Proposed Action area was included in USFWS' IPaC review process (Table 6).

Table 6. Migratory Bird Species Potentially Found in the Proposed Action Area.

Species	Level of Concern	Breeding Season
Allen's Hummingbird (*Selasphorus sasin*)	BCC Rangewide (CON)	Breeds Feb 1 to Jul 15
Bald Eagle (*Haliaeetus leucocephalus*)	Non-BCC Vulnerable	Breeds Jan 1 to Aug 31

Species	Level of Concern	Breeding Season
Black Skimmer (*Rynchops niger*)	BCC Rangewide (CON)	Breeds May 20 to Sep 15
Black Swift (*Cypseloides niger*)	BCC Rangewide (CON)	Breeds Jun 15 to Sep 10
Black-chinned Sparrow (*Spizella atrogularis*)	BCC Rangewide (CON)	Breeds Apr 15 to Jul 31
California Thrasher (*Toxostoma redivivum*)	BCC Rangewide (CON)	Breeds Jan 1 to Jul 31
Clark's Grebe (*Aechmophorus clarkia*)	BCC Rangewide (CON)	Breeds Jun 1 to Aug 31
Common Yellowthroat (*Geothlypis trichas sinuosa*)	BCC - BCR	Breeds May 20 to Jul 31
Golden Eagle (*Aquila chrysaetos*)	Non-BCC Vulnerable	Breeds Jan 1 to Aug 31
Lawrence's Goldfinch (*Carduelis lawrencei*)	BCC Rangewide (CON)	Breeds Mar 20 to Sep 20
Marbled Godwit (*Limosa fedoa*)	BCC Rangewide (CON)	Breeds elsewhere
Nuttall's Woodpecker (*Picoides nuttallii*)	BCC - BCR	Breeds Apr 1 to Jul 20
Oak Titmouse (*Baeolophus inornatus*)	BCC Rangewide (CON)	Breeds Mar 15 to Jul 15
Olive-sided Flycatcher (*Contopus cooperi*)	BCC Rangewide (CON)	Breeds May 20 to Aug 31
Short-billed Dowitcher (*Limnodromus griseus*)	BCC Rangewide (CON)	Breeds elsewhere
Tricolored Blackbird (*Agelaius tricolor*)	BCC Rangewide (CON)	Breeds Mar 15 to Aug 10
Wrentit (*Chamaea fasciata*)	BCC Rangewide (CON)	Breeds Mar 15 to Aug 10
Yellow-billed Magpie (*Pica nuttalli*)	BCC Rangewide (CON)	Breeds Apr 1 to Jul 31

Finally, two fish species under the jurisdiction of NMFS may occur in the Proposed Action Area, including threatened Central California Coast Steelhead (*O. mykiss*) DPS and the threatened South-Central California Coast Steelhead (*O. mykiss*) DPS. The Proposed Action area overlaps the designated critical habitat of both steelhead DPSs (70 FR 52488, 2005) and includes the physical and biological features for migration, spawning, and rearing in both critical habitats. The Proposed Action area includes areas of proposed discharge to the upper Pajaro River basin, which includes the following streams that provide habitat for these steelhead DPSs: Pacheco Creek, Millers Canal, and Llagas Creek. Coyote Creek overlaps with Central California Coast Steelhead DPS range and designated critical habitat.

3.3.2 Environmental Consequences

No Action

Under the No Action Alternative, the needed repairs would not be conducted. As a result, the temporary and permanent impacts to the San Joaquin kit fox, least Bell's vireo, and temporary impacts to the Central California Coast steelhead DPS and South-Central California steelhead DPS and their respective critical habitats would not occur. However, if essential repairs are not

conducted, then, at some unknown time, a failure could occur, which may result in uncontrolled discharges to local waterways. This could result in erosion of habitat for the San Joaquin kit fox and could scour steelhead habitat and cause siltation of eggs, etc.

Proposed Action

The Proposed Action would result in the removal of 0.1 acres of woody chaparral vegetation at PC15 and PC16 (including the blowoff riser at PC16) to ensure safe access during maintenance activities. The removal of woody chaparral vegetation is being treated as a permanent impact of 0.1 acre of Northern Mixed Chaparral/Chamise Chaparral land cover for compliance with the SCVHP; this would impact migratory birds managed by the MBTA. There would be a temporary loss of 9.69 acres of San Joaquin kit fox foraging and denning habitat. This impact would be minimized and compensated by Valley Water's compliance with the SCVHP.

For those activities in San Benito County and Merced County that are not covered under the SCVHP, conservation measures are proposed for avoiding and minimizing any interaction with least Bell's vireo. These measures include a 500-foot buffer around any nest within which work will be suspended until vireos leave the area. A smaller buffer may be established if deemed protective by the USFWS-approved biologist and the biologist would continue to monitor the nest when activities occur immediately adjacent to the buffer zone to determine the effects of project activities on nesting least Bell's vireos. No take of least Bell's vireos would occur, as the SCVHP requires pre-activity surveys and a buffer around riparian habitat that may be used by the vireos for nesting. If present, the vireos could still be subject to minor disturbance from noise and the presence of personnel involved in the proposed repairs.

Regarding migratory bird species, the included conservation measures (Appendix B) would avoid potential impacts due to the Proposed Action. These measures include: preconstruction/pre-activity surveys, avoidance of disturbance noise levels, and establishment of physical buffers to avoid disturbance.

Potential impacts to the steelhead DPSs and their respective critical habitats would also be minimized by implementation of appropriate conservation measures (Appendix B), which have been developed in coordination with Valley Water and Reclamation. These measures would avoid or minimize impacts to the steelhead DPSs that might otherwise result from scouring, sedimentation, etc., that could smother eggs and damage the gills of fish. Further, conservation measures include those that would reduce impacts from ramping up or down water discharged from pipelines during dewatering activities and limit discharge rates to avoid stranding fish.

Cumulative Impacts

Currently, though not part of this request for approvals from Reclamation, the Federal Energy Regulatory Commission (FERC) Order Compliance Project (FOCP) for the Anderson Dam Seismic Retrofit Project (ADSRP) acts to *encumber* the baseline conditions. Valley Water has been ordered to implement interim risk reduction measures until the larger seismic retrofit of Anderson Dam is completed. As a result, the Anderson Reservoir is currently at deadpool level and expected to be kept at deadpool for multiple years, with a full reservoir not expected until after the ADSRP is completed, which is anticipated to occur in 2030.

In this context, Valley Water's Fish and Aquatic Habitat Collaboration Effort (FAHCE) program requires imported water from the Santa Clara Conduit to maintain (or augment) surface flow in the

reach of Coyote Creek from the Coyote Polyjet (0.26 miles downstream of Anderson Dam), downstream to Ogier Pond #2 outlet—a distance of approximately 4.2 miles within Coyote Creek. To comply with FAHCE and the FOCP, Valley Water and FERC have initiated emergency consultation with NMFS. NMFS provided technical assistance to FERC and Valley Water, providing interim risk reduction measures to address maintenance of surface water flows and water temperatures conducive to native, threatened steelhead (*O. mykiss*) DPSs in Coyote Creek, downstream of Anderson Dam.

While the actions covered in this EA are proposed to take place during the ADSRP, which has altered baseline environmental conditions, Valley Water has used CVP water supplies for maintaining (or augmenting) Coyote Creek surface flows since its inception as a CVP contractor. Reclamation's long-term operations, including deliveries of CVP water supplies to Valley Water, are outside of the scope of this routine O&M project.

Agricultural and urban development has historically resulted in loss and modification of habitat for Federally listed species in the Proposed Action area. Current impacts that are expected to continue in the future include agricultural activities, such as mowing of an adjacent hay field and possible use of pesticides. Compliance with the SCVHP includes a requirement that Valley Water compensate for habitat loss that would result from the Proposed Action. This, in conjunction with the minimization measures required, would reduce any cumulative contribution to biological resource impacts in the Proposed Action area.

3.4 Cultural Resources

3.4.1 Affected Environment

In an effort to identify historic properties, Reclamation reviewed internal records and archives, initiated a records search at the California Historical Information Center (NWIC File No. 20-1935) and conducted a pedestrian survey of 20.73 acres, which included the two rectifier locations and new staging areas. No historic properties were identified during the survey, nor did the internal archival review and records search identify any preexisting cultural resources located in the Area of Potential Effects (APE) or its immediate vicinity. Access routes within the APE were not included in the pedestrian survey as those locations have been used historically for a similar purpose as they will be used for the current undertaking. Recent research by Byrd et al. (2017) conducted on buried site potential in the Delta Region indicated Holocene landforms are present near the project area; however, there is a low buried sensitivity, and given that the ground had been heavily disturbed by prior construction of the Santa Clara Conduit and Pacheco sectionalizing valve vault structures, work in the APE has a low potential to affect buried historic properties.

Built environment resources within the APE for this undertaking are a group of physically and hydraulically connected components of the Santa Clara Conduit and Pacheco sectionalizing valve within Reclamation's San Felipe Division unit of the CVP, and provides Santa Clara County, San Benito County, the southern portion of Santa Cruz County, and the northern portion of Monterey County with CVP water. Construction of the Santa Clara Conduit began in 1983 and was completed in 1987, and the Pacheco sectionalizing valve was built in 1987. These structures are not yet 50 years old, are of common and utilitarian construction, appearance, and design, and do not meet any of the

National Register of Historic Places (National Register) criteria considerations. Reclamation has determined that they are therefore not eligible for inclusion in the National Register.

3.4.2 Environmental Consequences

No Action

Under the No Action Alternative, Reclamation would not approve Valley Water's request to perform maintenance on the Pacheco Conduit, Tunnel and Tank, and the Santa Clara Conduit and Tunnel. These facilities would continue to be operated in their existing conditions and there would be no effects to cultural resources in the Proposed Action area.

Proposed Action

The current undertaking will be confined to repair and replacement of existing conduit and valve structures. The addition of two new rectifiers to the Santa Clara Conduit is necessary to update electrical and control systems to continue vault and conduit operation. The rectifiers are low profile/close to the ground structures that will not detract from the surrounding viewshed.

Based on the above information, Reclamation reached a finding of *no historic properties affected* by the proposed project pursuant to 36 CFR § 800.4(d)(1). On January 21, 2021, Reclamation notified the California State Historic Preservation Officer (SHPO) of its finding, and on February 9, 2022, SHPO responded with no objection. Reclamation has determined that there would be no impacts to cultural resources as a result of the Proposed Action.

Cumulative Impacts

As there are no impacts to cultural resources associated with the Proposed Action, there would be no cumulative effect.

3.5 Global Climate Change

3.5.1 Affected Environment

Greenhouse gases and climate change are cumulative global issues. The California Air Resources Board (CARB) and the U.S. Environmental Protection Agency (EPA) regulate greenhouse gas emissions in California and the U.S., respectively. While CARB has the primary regulatory responsibility for greenhouse gas emissions in California, local agencies such as the Bay Area Air Quality Management District and Monterey Bay Unified Air Pollution Control District can also adopt policies for greenhouse gas emission reduction.

Gases that trap heat in the atmosphere are often called greenhouse gases. Some greenhouse gases, such as carbon dioxide (CO_2), occur naturally and are emitted to the atmosphere through natural processes and human activities. Other greenhouse gases (e.g., fluorinated gases) are created and emitted solely through human activities. The principal greenhouse gases that enter the atmosphere because of human activities are: CO_2, methane (CH_4), nitrous oxide, and fluorinated gasses (EPA 2019).

3.5.2 Environmental Consequences

No Action
Under the No Action Alternative, the Pacheco Conduit, Tunnel and Tank, and the Santa Clara Conduit and Tunnel would continue to be operated in their existing conditions. There would be no change in greenhouse gas emissions.

Proposed Action
As shown in Table 4, annual construction and operational emissions of CO_{2e} are estimated to be93.5, 170.8, and 80.8 metric tons (2022, 2023, and 2024 respectively), well less than the EPA's 25,000 metric tons per year threshold for annually reporting GHG emissions. Accordingly, the Proposed Action would result in below *de minimis* impacts to global climate change.

Cumulative Impacts
Greenhouse gases generated by the Proposed Action are expected to be small, as seen in Table 4. While any increase in greenhouse emissions would add to the global inventory of gases that would contribute to global climate change, the Proposed Action would result in potentially minimal to no increases in greenhouse gas emissions and a net increase in greenhouse gas emissions among the pool of greenhouse gases would not be detectable.

3.6 Water Resources

3.6.1 Affected Environment
Water resources, including surface water and groundwater supplies within the Proposed Action Area have not appreciably changed since the previous maintenance project conducted by Valley Water, reviewed by Reclamation in EA-15-059 (Reclamation 2017) and previously incorporated by reference. The following provides updates to the water resources:

San Benito County Water District
Similar to Valley Water, SBCWD requested a non-discretionary conversion of its CVP water service contract under Section 4011 of the WIIN Act (Public Law 114-322, 130 Stat. 1628). SBCWD's permanent water service contract (Contract No. 8-07-20-W0130A-P) allows for allocations of up to 43,800 AF of South-of-Delta CVP water supplies from San Luis Reservoir. The majority of SBCWD's CVP water is delivered for agricultural purposes, but a portion is also delivered for municipal and industrial (M&I) purposes.

Groundwater A portion of the Proposed Action area overlies the North San Benito groundwater subbasin, for which SBCWD is the Groundwater Sustainability Agency (GSA) tasked with management of groundwater supplies pursuant to the California State Groundwater Management Act (SGMA). SBCWD and Valley Water collaborated in preparing the North San Benito Subbasin Groundwater Sustainability Plan (GSP) (SBCWD 2021). The North San Benito Subbasin GSP was posted January 31, 2022, and the public comment period ends April 16, 2022. In analyzing the North San Benito subbasin for specific sustainability indicators defined in SGMA, SBCWD found that the subbasin has been managed sustainably through utilization of imported CVP water supplies. It was found that the subbasin could be sustainably managed into the future when assuming

reasonable availability of CVP water supplies, without long-term planned reductions in groundwater pumping.

Santa Clara Valley Water District

Valley Water holds a permanent water service contract with Reclamation (Contract No. 7-07-20-W0023AB-P) . Total annual water use in Santa Clara County is currently estimated to be 400,000 AF of which only a portion is CVP water as described below. Approximately 10 percent of this use is for agricultural purposes. Most of the remaining use is for M&I purposes, which includes residential, commercial, industrial, and institutional water use. Water is also used to meet environmental needs, such as maintenance of minimum stream flows to meet fishery needs.

Groundwater Under SGMA, Valley Water is the GSA for the entirety of the Santa Clara Subbasin (Basin 2-9.02) and Llagas Subbasin (Basin 3-3.01), which are partially within the Proposed Action area. Valley Water manages these subbasins in accordance with its GSP, the Groundwater Management Plan (Valley Water 2021). In its analysis of these subbasins, Valley Water found that the Santa Clara and Llagas subbasins had fully recovered to pre-drought levels shortly after the 2012 to 2016 drought (including the temporary impacts due to Valley Water's activities as described in EA-15-059), and groundwater elevation and storage remained in healthy condition through 2018, 2019, and 2020 (although the estimated groundwater storage in both subbasins underwent a net decrease for 2020, levels remained well above established thresholds).

3.6.2 Environmental Consequences

No Action

Under the No Action Alternative, Reclamation would not approve the Valley Water's Proposed Action. Valley Water would continue to perform maintenance on a case-by-case basis consistent with existing environmental compliance. However, the facilities could degrade if timely maintenance did not occur and the system could be compromised, adversely impacting water resources for Valley Water's customers.

Proposed Action

Under the Proposed Action, the Pacheco Conduit, Santa Clara Conduit, Pacheco Tunnel, and Santa Clara Tunnel would be out of service temporarily during the dewatering and inspection periods of the Proposed Action. Both water districts have alternative sources of water. In order to reduce the temporary disruption and inconvenience to water users, work requiring pipeline shutdown would be scheduled for when demand is lower. As described for the Proposed Action, conservation measures would be implemented during construction in order to control erosion, prevent any potential impacts to local waterways, and to minimize ground saturation in the appurtenance work areas. Additionally, during the discharge itself, pipe mechanics, construction inspectors, biologists, and other Valley Water personnel would be on-site and could report out the need to shut down a site if a creek appears to be overloaded. Valley Water would acquire all permits required for working in waterways and implement all necessary BMPs to avoid and/or minimize potential water quality impacts.

Groundwater There may be temporary impacts to groundwater levels in areas managed by Valley Water and SBCWD that could shift to groundwater supplies during the periods when the San Felipe Division facilities associated with the Proposed Action are shutdown. However, these impacts would be temporary and would be offset once the shift back to surface water supplies is made.

Completion of the Proposed Action would ultimately provide both water district's customers with a more reliable source of water.

Cumulative Impacts

Temporary disruption in water service to Valley Water's and SBCWD's customers would occur during the Proposed Action; however, this would be offset by scheduling and using other sources of water during the Project. Overall, there would be cumulatively beneficial impacts over the long-term, as water supply would be more reliable. Additionally, the completion of this Proposed Action, when combined with future O&M activities, would reduce the need to discharge large amounts of water prior to future maintenance activities as new infrastructure would be added that would allow isolation of the system resulting in less water discharges prior to O&M activities. These activities also extend the useful life of the pipeline by identifying and addressing deficiencies.

Section 4. Consultation and Coordination

4.1 Agencies and Persons Consulted

Reclamation consulted and coordinated with the following in the preparation of this EA:

- California State Historic Preservation Office
- U.S. Fish and Wildlife Service
- National Marine Fisheries Service
- San Benito County Water District
- Santa Clara Valley Water District

4.2 Public Involvement

Reclamation intends to provide the public with an opportunity to comment on the Draft Environmental Assessment during a 30-day public review period.

4.3 Endangered Species Act (16 U.S.C. § 1531 et seq.)

Section 7 of the Endangered Species Act requires Federal agencies, in consultation with the Secretary of the Interior and/or Commerce, to ensure that their actions do not jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of the critical habitat of these species.

4.3.1 Consultation with National Marine Fisheries Service

Reclamation submitted a biological evaluation and requested informal consultation with NMFS on February 23, 2022. The effects of the Proposed Action on ESA listed species and critical habitat were analyzed and Reclamation determined that the Proposed Action *may affect, but is not likely to*

adversely affect the two steelhead DPS's, and their designated critical habitat. Reclamation's requested concurrence from NMFS is currently pending.

4.3.2 Consultation with U.S. Fish and Wildlife Service

On March 8, 2021, Reclamation submitted a biological assessment to the USFWS requesting formal consultation on the Proposed Action in both Santa Clara and San Benito Counties.

As noted previously, the Proposed Action activities that occur in Santa Clara County are covered under the SCVHP (Santa Clara Valley Habitat Agency 2012). Effects to these species occurring within Santa Clara County portion of the Proposed Action were analyzed as a part of the intra-Service consultation for the SCVHP. The intra-Service consultation included formal consultation on effects of the SCVHP's covered activities to critical habitat for the California red-legged frog and the California tiger salamander.

Reclamation determined that activities in the San Benito County portion of the Proposed Action *may affect, and are likely to adversely affect* the federally threatened California red-legged frog and California tiger salamander (Central California Coast DPS). On March 7, 2022, USFWS responded with a biological opinion that listed non-discretional reasonable and prudent measures with terms and conditions to further avoid effects to listed species and their critical habitat (Appendix C). In addition, Reclamation determined that the activities within San Benito County *may affect, but are not likely to adversely affect* the endangered San Joaquin kit fox, endangered least Bell's vireo, critical habitat for California red-legged frog and critical habitat for California tiger salamander, Central California Coast DPS. The USFWS concurred with Reclamation's determination within the biological opinion provided on March 7, 2022 (included as Appendix C).

4.4 Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq.)

The Magnuson-Stevens Fishery Conservation and Management (MSA) is the primary law governing marine fisheries management in United States federal waters. The Act was first enacted in 1976 and amended in 1996. EFH provisions in Section 305(b) of the MSA (16 U.S.C. 1855(b)) are considered for this Action. Reclamation also reviewed the likely effects of the Proposed Action on EFH, pursuant to section 305(b) of the MSA (16 U.S.C. 1855(b)).

Reclamation reviewed the likely effects of the Proposed Action on EFH, pursuant to section 305(b) of the MSA (16 U.S.C. 1855(b)) and concluded that no adverse effect to Pacific Coast Salmon EFH would occur in the Project Action area receiving waters of Coyote Creek for three months (November through January), during each of the two years of the Project—Phase 1 and Phase 2. No other impacts are expected from the Proposed Action in Coyote Creek since the Proposed Action would avoid estuaries completely. Reclamation's determination of Project affects to EFH are pending the informal consultation with NMFS.

4.5 Title 54 U.S.C. § 306108, Commonly Known as Section 106 of the National Historic Preservation Act

Title 54 U.S.C. § 306108, commonly known as Section 106 of the National Historic Preservation Act (formerly 16 U.S.C. 470 et seq.), requires Federal agencies to consider the effects of their undertakings on historic properties, properties determined eligible for inclusion in the National Register, and to afford the Advisory Council on Historic Preservation an opportunity to comment. Compliance with Section 106 follows a series of steps, identified in its implementing regulations found at 36 CFR Part 800, that include identifying consulting and interested parties, identifying historic properties within the area of potential effect, and assessing effects on any identified historic properties, through consultations with the SHPO, Indian tribes and other consulting parties.

Reclamation reached a finding of no historic properties affected by the Proposed Action pursuant to 36 CFR § 800.4(d)(1). On January 21, 2021, Reclamation notified the SHPO of this finding, and on February 9, 2022, the SHPO responded with no objection.

Section 5. References

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Appendix B – Conservation Measures

Appendix A – Valley Water's Specific Proposed Activities for Individual Vault Locations

Vault Number	Work Description	Major Parts or Equipment Required	Access	Vegetation Trimming Needed
Pacheco Conduit, Pacheco sectionalizing valve	Install 84" Butterfly Valve	Valve Nozzle Catwalks Crane Truck		Weed whack around vault as needed
PC2	**Dewatering** Replace 10" Butterfly Valve and Coupling Replace 10" Tee and 36" to 10" Reducing Nozzle	Truck Truck Mounted Crane		Weed whack around vault as needed
PC12	**Dewatering** Replace 20" Butterfly Valve Replace 36" to 20" Reducing Nozzle	Truck Truck Mounted Crane Dewatering BMP (plastic sheeting, hose, straw waddle)		Weed whack around vault as needed
SCC7	Replace/Repair Corrosion Control Test Station Upgrade Cathodic Protection Station5 Install AFO Special Nozzle	AFO Nozzle Truck Truck Mounted Crane		
SCC8	Replace Ladder Upgrade Cathodic Protection Station Replace 20" Butterfly Valve Replace Tee Replace 28" X 20" Reducing Nozzle Install AFO Special Nozzle	Valve Truck Mounted Crane Truck AFO Nozzle Butterfly Valve	Steep hill to access site - alternate access for crane needed	Weed whack around vault
SCC9 (located in Santa Clara County, but discharges to San Benito County)	**Dewatering** Replace 28" X 10" Reducing Nozzle Replace Tee Replace Pump-out Riser Replace 10" Manual Gate Valve Replace 10" Butterfly Valve Install Exterior Ladder Upgrade Cathodic Protection Station Install AFO Special Nozzle	Valve Truck Mounted Crane Truck Dewatering BMP (plastic sheeting, hose, straw waddle) AFO Nozzle		
SCC10	Replace 28" X 8" Reducing Nozzle Replace Tee Replace 8" combination air release valve Replace (2) 8" Butterfly Valves Upgrade Cathodic Protection Station	Valve Truck Mounted Crane Truck		
SCC11	Replace/Repair Corrosion Control Test Station Patch/Replace Outside Concrete Vault	Valve Truck Mounted Crane	Private access	Weed whack around vault

Vault Number	Work Description	Major Parts or Equipment Required	Access	Vegetation Trimming Needed
	Replace 28" Blind Flange Replace Ladder Install Exterior Ladder Upgrade Cathodic Protection Station Install AFO Special Nozzle	Truck AFO Nozzle Blind Flange		
SCC12	No work			
SCC13	No Work			
SCC14	Replace Flowmeter	Truck		
CFI	**Dewatering** Replace (2) 66" Motor Operated Butterfly Valves Replace (2) 20" Manual Butterfly Valves Replace (2) 6" combination air release valves Replace (2) 6" Manual Butterfly Valves Replace (2) 27" X 6" Reducing Nozzle Replace (4) 8" Manual Butterfly Valves Replace (2) 8" Victaulic Connector Upgrade Cathodic Protection Station Replace Catwalk Install (2) AFO Special Nozzle Install (4) 8" Restrained Dismantling Joint Replace/Repair Corrosion Control Test Station	Valve Nozzle Catwalks Crane Truck Dewatering BMP (plastic sheeting, hose, straw waddle) Butterfly Valves AFO Nozzle	Private access	
CFO	Replace/Repair Corrosion Control Test Station Replace (2) 66" Motor Operated Butterfly Valves Replace (3) 6" Butterfly Valves Replace 27" X 6" Reducing Nozzle Replace (2) 6" Victaulic Connector Replace 6" combination air release valve Upgrade Cathodic Protection Station Replace Catwalk Install (2) AFO Special Nozzle	Valve Crane Truck Blind Flange	Private access	Weed whack around vault
SCC15	Replace/Repair Corrosion Control Test Station Replace Ladder Upgrade Cathodic Protection Station Replace Flowmeter	Truck	Private access	
SCC15.5	Internal Vault Coating			

Vault Number	Work Description	Major Parts or Equipment Required	Access	Vegetation Trimming Needed
SCC16	**Dewatering** Patch/Replace Outside Concrete Vault Replace 28" X 20" Reducing Nozzle Replace Tee Replace 20" Butterfly Valve Replace Ladder Install Exterior Ladder Patch existing hole on top of vault Install Cathodic Protection Station	Valve Truck Mounted Crane Truck Dewatering BMP (plastic sheeting, hose, straw waddle) AFO Nozzle	Private access	
SCC17	Replace 8" Manual Butterfly Valve Replace 8" combination air release valve Replace 28" X 8" Reducing Nozzle Replace Ladder Install Exterior Ladder Upgrade Cathodic Protection Station	Valve Truck Mounted Crane Truck	Private access Farm animals present	Remove crops for access
SCC18	Replace 28" Blind Flange Replace Ladder Install Exterior Ladder Upgrade Cathodic Protection Station Install AFO Special Nozzle	Valve Truck Mounted Crane Truck AFO Nozzle	Private access	
SCC19	**Dewatering** Replace 28" X 10" Reducing Nozzle Replace Pump-out Riser Replace 10" Manual Gate Valve Replace Ladder Install Exterior Ladder Upgrade Cathodic Protection Station	Valve Truck Mounted Crane Truck Dewatering BMP (plastic sheeting, hose, straw waddle) AFO Nozzle		Remove crops for access
SCC20	Replace 28" Blind Flange Install Exterior Ladder Install Cathodic Protection Station Install AFO Special Nozzle	Valve Truck Mounted Crane Truck AFO Nozzle		Weed whack around vault
SCC21	Replace Ladder Install Exterior Ladder Install Cathodic Protection Station	Truck	Private access Farm animals present	Weed whack around vault
SCC22	Replace 8" Manual Butterfly Valve Replace 8" combination air release valve Replace 28" X 8" Reducing Nozzle Install Exterior Ladder	Valve Truck Mounted Crane Truck		

Vault Number	Work Description	Major Parts or Equipment Required	Access	Vegetation Trimming Needed
	Install Cathodic Protection Station Install AFO Special Nozzle	AFO Nozzle		
SCC23	**Dewatering** Replace 28" X 10" Reducing Nozzle Replace Pump-out Riser Replace 10" Manual Gate Valve Upgrade Cathodic Protection Station	Valve Truck Mounted Crane Truck Dewatering BMP (plastic sheeting, hose, straw waddle) AFO Nozzle		
SCC24	Replace 28" Blind Flange Replace Ladder Install Exterior Ladder Upgrade Cathodic Protection Station	Valve Truck Mounted Crane Truck	Private access	Weed whack around vault May need to remove crops for access
SCC25	Replace 8" Manual Butterfly Valve Replace 8" combination air release valve Replace 28" X 8" Reducing Nozzle Replace Ladder Install Exterior Ladder Install Cathodic Protection Station	Valve Truck Mounted Crane Truck	Vault is in agricultural field	May need to clear crops around vault and for
SCC26	**Dewatering** Replace 20" Spool Replace 20" Blowoff Valve Replace 20" Butterfly Valve Replace 28" X 20" Reducing Nozzle Replace Ladder Install Exterior Ladder Upgrade Cathodic Protection Station Replace/Repair Corrosion Control Test Station	Valve Truck Mounted Crane Truck Dewatering BMP (plastic sheeting, hose, straw waddle) AFO Nozzle		Weed whack around dissipater Weed whack around vault
SCC27	Replace 28" Blind Flange Replace Ladder Upgrade Cathodic Protection Station Install AFO Special Nozzle	Valve Truck Mounted Crane Truck AFO Nozzle		
SCC28	Replace/Repair Corrosion Control Test Station Replace 8" Manual Butterfly Valve Replace 8" combination air release valve Replace 28" X 8" Reducing Nozzle	Valve Truck Mounted Crane Truck AFO Nozzle		Weed whack around vault

Vault Number	Work Description	Major Parts or Equipment Required	Access	Vegetation Trimming Needed
	Install Cathodic Protection Station Install AFO Special Nozzle			
SCC29	**Dewatering** Replace 28" X 10" Reducing Nozzle Replace Pump-out Riser Replace 10" Manual Gate Valve Replace Ladder Upgrade Cathodic Protection Station Replace/Repair Corrosion Control Test Station	Valve Truck Mounted Crane Truck Dewatering BMP (plastic sheeting, hose, straw waddle) AFO Nozzle		Weed whack around vault and for placement of plastic sheeting spillway
SCC30	Replace 28" Blind Flange Replace Ladder Install Exterior Ladder Install Cathodic Protection Station	Valve Truck Mounted Crane Truck		Weed whack around vault May need to clear crops around vault and for access
SCC31	Replace 28" X 6" Reducing Nozzle Replace 6" combination air release valve Replace Ladder Install Exterior Ladder Upgrade Cathodic Protection Station	Valve Truck Mounted Crane Truck	Vault is in agricultural field	May need to clear crops
SCC32	**Dewatering** Replace Pump-out Riser Replace 28" X 10" Reducing Nozzle Replace 10" Gate Valve Replace Ladder Upgrade Cathodic Protection Station	Valve Truck Mounted Crane Truck Dewatering BMP (plastic sheeting, hose, straw waddle) AFO Nozzle	Vault is in agricultural field	May need to clear crops around vault and for access. Weed whack for placement of plastic sheeting spillway
SV1	**Dewatering** Replace 84" Motor Operated Butterfly Valve Replace 6" combination air release valve Replace 6" Manual Butterfly Valve Replace 27" X 6" Reducing Nozzle Replace 24" Motor Operated Butterfly Valve Replace Ladder Upgrade Cathodic Protection Station Replace/Repair (2) Corrosion Control Test Stations Install Catwalk	Valve Crane Truck Dewatering BMP (plastic sheeting, hose, straw waddle) Butterfly Valve Catwalk AFO Nozzle		

Vault Number	Work Description	Major Parts or Equipment Required	Access	Vegetation Trimming Needed
	Install AFO Special Nozzle			
SCC33	Replace 28" X 10" Reducing Nozzle Replace Tee Replace 10" Dresser Assembly Replace Pump-out Riser Replace 10" Manual Gate Valve Replace Ladder Upgrade Cathodic Protection Station Replace/Repair Corrosion Control Test Station	Valve Truck Mounted Crane Truck		
SCC34	Install Exterior Ladder Install Cathodic Protection Station	Truck		Weed whack around vault
SCC35	**Dewatering** Replace 28" X 10" Reducing Nozzle Replace Pump-out Riser Replace 10" Dresser Assembly Replace Tee Replace 10" Manual Gate Valve Replace Ladder Install Exterior Ladder Install Cathodic Protection Station	Valve Truck Mounted Crane Truck Dewatering BMP (plastic sheeting, hose, straw waddle) AFO Nozzle	Vault is in agricultural field	May need to clear crops around vault and for access
SCC36	Replace Ladder Install Exterior Ladder Install Cathodic Protection Station Install AFO Special Nozzle	Valve Truck Mounted Crane Truck AFO Nozzle	Access through gate	Weed whack around vault
SCC37	**Dewatering** Replace 28" X 10" Reducing Nozzle Replace 10" Dresser Assembly Replace Pump-out Riser Replace 10" Manual Gate Valve Replace Ladder Install Cathodic Protection Station	Valve Truck Mounted Crane Truck Dewatering BMP (plastic sheeting, hose, straw waddle) AFO Nozzle	Access through gate Horses present	
SCC38	Install Exterior Ladder Upgrade Cathodic Protection Station	Truck	Access through gate	Weed whack around vault
SCC39	**Dewatering** Replace 28" X 10" Reducing Nozzle Replace Tee Replace 10" Dresser Assembly Replace Pump-out Riser	Valve Truck Mounted Crane Truck		Weed whack for placement of plastic sheeting spillway

Vault Number	Work Description	Major Parts or Equipment Required	Access	Vegetation Trimming Needed
	Replace 10" Manual Gate Valve Replace Ladder Install Cathodic Protection Station Install AFO Special Nozzle	Dewatering BMP (plastic sheeting, hose, straw waddle) AFO Nozzle		
Rectifier 1	Install New Rectifier	Truck Boring Rig Ditch Witch Hand digging tools Truck		Weed whack around vault
SCC40	Install Exterior Ladder Upgrade Cathodic Protection Station Replace/Repair Corrosion Control Test Station	Truck	Private access	Weed whack around vault
SCC41	**Dewatering** Replace 28" X 10" Reducing Nozzle Replace Tee Replace Pump-out Riser Replace (2) 10" Desser Assemblies Replace 10" Manual Gate Valve Install Exterior Ladder Upgrade Cathodic Protection Station	Valve Truck Mounted Crane Truck Dewatering BMP (plastic sheeting, hose, straw waddle) AFO Nozzle	Private access Animals present Gate is too narrow for truck access	
SCC42	Replace 28" X 6" Reducing Nozzle Install Exterior Ladder Upgrade Cathodic Protection Station Install AFO Special Nozzle Replace/Repair Corrosion Control Test Station	Valve Truck Mounted Crane Truck AFO Nozzle		Weed whack around vault
SCC43	Replace Ladder Install Exterior Ladder Install Cathodic Protection Station	Truck	Private access	
SCC44	Replace 28" X 6" Reducing Nozzle Install Exterior Ladder Upgrade Cathodic Protection Station Replace/Repair Corrosion Control Test Stations	Nozzle Truck Mounted Crane Truck Dewatering BMP (plastic sheeting, hose, straw waddle) AFO Nozzle		
SCC45	Replace 28" X 10" Reducing Nozzle Replace Tee Replace 10" Desser Assembly Replace Pump-out Riser	Valve Truck Mounted Crane Truck	Private access	Weed whack around vault

Vault Number	Work Description	Major Parts or Equipment Required	Access	Vegetation Trimming Needed
	Replace 10" Manual Gate Valve Replace Ladder Upgrade Cathodic Protection Station	AFO Nozzle		
SCC46	Install Exterior Ladder Install Cathodic Protection Station	Truck		Weed whack around vault
SCC47	**Dewatering** Replace Pump-out Riser Install Exterior Ladder Install Cathodic Protection Station Install AFO Special Nozzle	Nozzle Truck Mounted Crane Truck Dewatering BMP (plastic sheeting, hose, straw waddle) AFO Nozzle		
SCC47A	Install Exterior Ladder Install Cathodic Protection Station	Truck		
SCC48	Replace Pump-out Riser Install Cathodic Protection Station	Riser Crane Truck		
SCC49	Replace 28" X 6" Reducing Nozzle Replace Ladder Install Exterior Ladder Upgrade Cathodic Protection Station	Nozzle Truck Mounted Crane Truck Dewatering BMP (plastic sheeting, hose, straw waddle) AFO Nozzle		
SCC50	**Dewatering** Replace Pump-out Riser Replace Ladder Install Exterior Ladder Upgrade Cathodic Protection Station	Riser Truck Mounted Crane Truck Dewatering BMP (plastic sheeting, hose, straw waddle)		
SV2	Replace 84" Butterfly Valve Replace 6" combination air release valve Replace 6" Butterfly Valve Replace 27" X 6" Reducing Nozzle Replace 24" Butterfly Valve Upgrade Cathodic Protection Station Install Catwalk Install AFO Special Nozzle	Valve Nozzle Truck Butterfly Valve AFO Nozzle Catwalk Crane		

Vault Number	Work Description	Major Parts or Equipment Required	Access	Vegetation Trimming Needed
	Replace/Repair Corrosion Control Test Station			
SCC51	**Dewatering** Replace Pump-out Riser Replace 10" Dresser Assembly Replace Tee Replace 10" Manual Gate Valve Install Cathodic Protection Station	Valve Tee Truck Mounted Crane Truck Dewatering BMP (plastic sheeting, hose, straw waddle)		Weed whack for placement of plastic sheeting spillway
SCC52	No Work			
SCC53	**Dewatering** Replace 28" X 10" Reducing Nozzle Replace 10" Dresser Assembly Replace Pump-out Riser Replace Manual Gate Valve Install Cathodic Protection Station Install AFO Special Nozzle	Valve Nozzle Truck Mounted Crane Truck Dewatering BMP (plastic sheeting, hose, straw waddle) AFO Nozzle	Gate is too narrow for truck access	Weed whack around vault
SCC54	Install Exterior Ladder Upgrade Cathodic Protection Station	Truck		Weed whack around vault
SCC55	**Dewatering** Replace Nozzle 28" X 10" Reducing Nozzle Replace 10" Dresser Assembly Replace Tee Replace Pump-out Riser Replace Manual Gate Valve Upgrade Cathodic Protection Station	Valve Tee Nozzle Truck Mounted Crane Truck Dewatering BMP (plastic sheeting, hose, straw waddle)		Weed whack around vault
SCC56	Replace 28" X 6" Reducing Nozzle Replace Tee Replace (2) 6" Butterfly Valve Replace 6" Restrained Dismantling Joint Replace 6" combination air release valve Install Exterior Ladder Upgrade Cathodic Protection Station Install AFO Special Nozzle	Valve Nozzle Truck Mounted Crane Truck AFO Nozzle		May need to remove crops around vault and for access
SCC57	**Dewatering** Replace 28" X 10" Reducing Nozzle Replace 10" Dresser Assembly	Valve Nozzle		Prune ornamental trees for access

Vault Number	Work Description	Major Parts or Equipment Required	Access	Vegetation Trimming Needed
	Replace Pump-out Riser Replace Tee Replace (2) 10" Manual Gate Valve Install Exterior Ladder Upgrade Cathodic Protection Station	Truck Mounted Crane Truck Dewatering BMP (plastic sheeting, hose, straw waddle)		
SCC58	**Dewatering** Upgrade Cathodic Protection Station Install AFO Special Nozzle	Nozzle Truck Mounted Crane Truck Dewatering BMP (plastic sheeting, hose, straw waddle) AFO Nozzle		
SCC59A	**Dewatering** Upgrade Cathodic Protection Station Replace 24" Manual Butterfly Valve Replace 28" X 24" Reducing Nozzle Replace 24" X 24" X 24" X 10" X 1/2" Cross Replace 10" Pipe Replace 24" Blind Flange Bored to fit 2" Weld-O-Let Replace 1" combination air release valve Replace 1" Manual Gate Valve	Valve Tee Nozzle Truck Mounted Crane Truck		
SCC59B	Replace 12" Bifurcation Valve W/Stem Extension and Manual Operator Replace 12" Sleeve Valve Upgrade Cathodic Protection Station	Valve Truck Mounted Crane Truck		
SCC59C	Upgrade Cathodic Protection Station Replace/Repair Corrosion Control Test Station	Truck		
SCC60	Replace 32" Blind Flange Upgrade Cathodic Protection Station Install AFO Special Nozzle Replace/Repair Corrosion Control Test Station	Blind Flange Nozzle Truck Mounted Crane Truck AFO Nozzle		Weed whack around vault
Madrone Turnout	**Dewatering** Replace 10" Flowmeter Replace 10" Gate Valve Upgrade Cathodic Protection Station Install new rectifier (Rectifier 2)	Truck Mounted Boring Rig Truck Hand digging tools Ditch Witch		Weed whack around vault

Vault Number	Work Description	Major Parts or Equipment Required	Access	Vegetation Trimming Needed
	Replace/Repair Corrosion Control Test Station			
Half Road Turnout	Replace 6" Gate Valve Replace 18 1/4" Pump	Valve Truck Mounted Crane Truck		Weed whack around vault
SCC63	Replace 16" Butterfly Valve	Valve Truck Mounted Crane Truck		Weed whack around vault

Appendix B – Conservation Measures

Section 1. BMPs and Mitigation Measures Unrelated to T&E Species

The following general measures are incorporated into the Proposed Action, but only relate to the protection of resources other than federally listed species and their critical habitats. These measures are incorporated from the Santa Clara Valley Water District's (SCVWD) Pipeline Maintenance Program (PMP) Environmental Impact Report (EIR). The original numbering is preserved (Valley Water 2007).

BMP Hazards-1: Smoking shall be prohibited except in designated staging areas and at least 20 feet from any combustible chemicals, dry grass, or vegetation. Smoking shall be prohibited in pipeline or near the repair surface (Source: PMP).

BMP Hazards-2: All heavy equipment and rubber-tired construction vehicles used for off-road access in rural environments shall be equipped with fire extinguishers. All rubber-tired construction vehicles used for off-road access in rural environments shall be equipped with appropriate firefighting equipment, such as shovels and axes or pulaskis, to aid in the prevention or spread of fires. All construction equipment shall be equipped with the appropriate spark arrestors and functioning mufflers (Source: PMP).

BMP Hazards-3: An extinguisher shall be available at the project site at all times when welding or other repair activities that can generate sparks (such as metal grinding) is occurring (Source: PMP).

BMP Hazards-4: Measures shall be implemented to ensure that hazardous materials are properly handled, and the quality of water resources is protected by all reasonable means. Prior to entering the work site, all field personnel shall know how to respond when toxic materials are discovered. The discharge of any hazardous or nonhazardous waste as defined in Division 2, Subdivision 1, Chapter 2 of the California Code of Regulations shall be conducted in accordance with applicable State and federal regulations (Source: Best Management Practices Handbook HM-12 Hazardous Materials Management).

BMP Hazards-11: Drivers transporting sodium bisulfite, sodium hypochlorite or any other hazardous material shall have a commercial driver's license with a HAZMAT endorsement (Source: PMP).

BMP Hazards-12: To ensure worker safety is protected during bank protection projects in areas with potentially elevated contaminant concentrations, personal protective equipment would be required during project construction to maintain exposure below levels established by the Occupational Safety and Health Administration (OSHA) [Source: Best Management Practices Handbook HM-15: Avoid Exposing Soils with High Mercury Levels].

BMP Hazards-13: If road construction and maintenance, or construction and grading operations are to occur in areas where naturally-occurring asbestos is likely to be found (such as in serpentine soils), appropriate dust control measures and notification requirements outlined by the Bay Area Air

Quality Management District under BMP Air Quality-2 would be implemented. Regardless of the size of the disturbance, activities must not result in emissions that are visible crossing the property line. Road construction and maintenance activities in remote locations are exempt from this requirement (Source: PMP).

BMP Hazards-14: The District shall provide one portable toilet and one wash station per 20 workers or fraction thereof for any project sites that do not have mobile access to a nearby facility. Wash stations shall also be required on-site for any job where hazardous materials are handled (such as in repair work) or where pipeline draining involves using dechlorination chemical (Source: PMP).

Mitigation Measure Hazards-3: If excavation work is to be conducted (1) in an area of known or suspected significant use or storage of hazardous materials (including gas stations, industrial plants, manufacturing facilities, etc.), or (2) in an area of known or suspected release of contaminants, the District shall contact the local agency overseeing hazardous materials releases as well as in-house personnel overseeing groundwater contamination sites to verify whether a release has occurred in the area and whether such a release is expected to affect conditions at the excavation site. If a release has occurred which is expected to affect excavation site conditions, a Health and Safety Plan shall be prepared prior to commencing with any excavation activities which addresses appropriate measures to be implemented, including personal protection and monitoring equipment, appropriate containment measures to implement if contaminated soil or shallow groundwater is encountered, and decontamination procedures. All workers shall be notified of the potential hazards and educated about the elements of the Health and Safety Plan prior to starting work (Source: PMP).

BMP Hydrology-2: Methods used to prevent mud from being tracked out of work sites onto roadways include installing on unsurfaced access roads a layer of geotextile mat followed by a 4-inch thick layer of 1-3 inch diameter gravel (Source: SMP Provision No. 4.3).

BMP Hydrology-21: RWQCB objectives for temperature in receiving waters (measured 100 feet downstream of project site in streams and 50 feet downstream in lakes) shall not be exceeded. Receiving water and discharge water would be monitored by a trained individual for temperature prior to the discharge and periodically throughout the drainage operation (Source: PMP).

BMP Hydrology-24: Receiving water would be monitored for dissolved oxygen and pH before, during, and after discharge of treated water to ensure that Region 2 Basin Plan standards (6.5-8.5 for pH, and greater than 5 mg/L for dissolved oxygen [SFRWQCB 2004]) are not violated for at least the initial release in each receiving water body or as required in NPDES permits issued by the RWQCB. Data shall be reported to the RWQCB as required (Source: PMP).

BMP Hydrology-19: The District would obtain storm drain capacity information from the responsible municipality prior to discharge to a storm drain. Discharge rates to the storm drain would be maintained below its conveyance capacity (Source: Water Utility Discharge Pollution Prevention Plan (WUDPPP) BMP CM-A).

BMP Geology-1: In considering access routes, slopes of greater than 20 percent should generally be avoided if possible. Subsequent to access, any sloped area should be examined for evidence of instability and either revegetated or filled as necessary to prevent future landslide or erosion (Source: PMP).

Mitigation Measure Geology-1: Excavation plans shall identify any areas where slope stability may be impacted by excavation activities. In areas of potential slope stability problems, measures to stabilize the slope during excavation shall be taken, such as cutting benches instead of large slopes, and using temporary reinforcement materials. After excavation is complete, the area shall be revegetated and repaired to ensure slope stability (Source: PMP).

BMP Biology-5: All construction pipes, culverts, or similar structures with a diameter of 4 inches or greater that are stored at a construction site for one or more overnight periods would be thoroughly inspected for wildlife by properly trained construction personnel before the pipe is subsequently buried, capped, or otherwise used or moved in anyway. If a kit fox, or any other sensitive species particularly state or federally listed species, is discovered inside a pipe, that section of pipe would not be moved until the Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity (Source: PMP).

Mitigation Measure Biology-4: A qualified botanist shall survey serpentine soil grasslands, shrub lands, and woodlands prior to conducting activities for the presence of special status serpentine plant species. Buffer zones around individual plants or populations shall be established. Areas supporting sensitive species shall be permanently marked in the field (and in the District GIS) and shall include 100 ft. buffer zones within the marked area (BMP Source: Best Management Practices Handbook BI-4).

Serpentine soil avoidance measures should be included in excavation grading plans. Avoidance measures may include flagging serpentine soils areas for avoidance during construction, minimizing the amount of vegetation to be removed in serpentine areas and using hand labor for upland vegetation control in serpentine soils after June 15.

Mitigation Measure Biology-5: Development of a Site Restoration Plan. If the project cannot be designed to avoid sensitive serpentine plant species (as discussed in BMP Geology-1 and Mitigation Measures Biology-3 and Biology-4) and the project activity would result in a significant impact to special status serpentine plants, then a Site Restoration Plan must be developed by a qualified restoration biologist familiar with the ecology of the significantly impacted species and approved by the responsible agency prior to the start of project activities. The objective of this mitigation measure would be to restore any special status plants and/or habitat that is temporarily disturbed during project implementation. The proposed restoration program would be monitored for a period of five years from the date of site grading to verify the success of the plant restoration. The restoration plan would be in accordance with District Revegetation Guidelines and would include:

- Designated locations on site to restore lost plant populations. Sufficient habitat within the proposed project area should exist for on-site restoration. Appropriate habitat would be created on suitable soils.
- Describe the propagation and planting techniques to be employed in the restoration effort. Perennial plants to be impacted by site grading should be salvaged and raised in a greenhouse for eventual transplanting within the restoration areas. Annual plants can be established through direct seeding practices and/or transplanting container-grown plants into existing suitable habitat.
- Develop a timetable for implementation of the restoration plan.
- Develop a monitoring plan and performance criteria.

- Describe remedial measures to be performed in the event that initial restoration measures are unsuccessful in meeting the performance criteria.
- Describe site maintenance activities to follow restoration activities. These may include weed control, irrigation, and control of herbivory by livestock and wildlife.

Mitigation Measure Biology-6: Off-site Mitigation. If a site restoration plan is not feasible, an off-site mitigation plan for affected sensitive plant species would be implemented. An off-site mitigation plan would incorporate all of the same elements as required under the Site Restoration Plan discussed above.

Mitigation Measure Biology-9: A qualified biologist would conduct pre-staging and pre-excavation surveys for bat species during the nursery period (March 15th through September 30th) if staging would occur within riparian settings or within 20 feet of bridges or overpasses. If pre-staging surveys determine that bat species occupy nursery sites just prior to staging, then an on-site biological monitor would be necessary during staging and access. The monitor would have authority to issue a cease and desist order if staging and access activity disturbs bats.

Mitigation Measure Biology-10: A qualified biologist would conduct pre-staging and pre-excavation surveys for the dusky-footed wood rat when work occurs within areas of dense shrub cover and riparian settings. If pre-staging or pre-excavation surveys determine that woodrat occupies the site just prior to staging, then avoidance measures would be the first choice of action (e.g., do not remove woody vegetation or nesting materials occupied by the species). If avoidance is not feasible, woodrat nests can be moved out of the excavation footprint by a qualified biologist under the guidance of the California Department of Fish and Game (CDFG).

Mitigation Measure Biology-11: A qualified biologist would conduct pre-staging and pre-excavation surveys for the western pond turtle. A qualified biologist, under the guidance of the CDFG, may move any individual encountered along excavation footprints, within access routes, or staging areas to suitable habitat away from the work area. Should a pond turtle nest be unearthed during excavation, any viable hatchlings would be placed out of harm's way in the nearest waterway by a qualified biologist. A qualified biomonitor would be on-site during the initiation of excavation out to the perimeter.

Mitigation Measure Biology-13: Burrowing owl surveys would follow the survey Protocol and Mitigation Guidelines established by the Burrowing Owl Consortium (1993). When avoidance is impossible, passive relocation of owls in occupied burrows would be performed according to the guidelines.

Mitigation Measure Biology-23: If excavation is required for the Snell Pipeline and Cross Valley Pipeline within Critical Habitat Unit 7 area, or any other serpentine soil area that has potential habitat for Bay checkerspot butterfly, a biologist would first survey the pipeline area to determine if Bay checkerspot butterfly could be present (through identification of *Plantago erecta*, Bay checkerspot butterfly host plant). If Bay checkerspot butterfly is not present, excavation can occur. All spoils removed for excavation would be stored on site and reused to cover the excavation.

The reclaimed area would be revegetated with similar species to the surrounding area. No gravel or fill would be placed within the Bay checkerspot butterfly Critical Habitat area for access or staging. Only temporary or existing roads can be used. If host plants for either species are identified,

Mitigation Measure Biology-5, which requires plant and soil preservation and site restoration would be implemented. A biological monitor would also be on site to ensure that work is halted if Bay checkerspot are found within 100 feet of the work site. Work would resume once the individual was more than 100 feet from the work area.

BMP Noise-3: The District would implement practices that minimize disturbances to residential neighborhoods surrounding work sites.

a) Internal combustion engines would be equipped with adequate mufflers.
b) Excessive idling of vehicles would be prohibited.
c) All construction equipment would be equipped with manufacturer's standard noise control devices.
d) The arrival and departure of trucks hauling material would be limited to the hours of construction. The use of jake brakes is prohibited in residential areas (Source: BMP Handbook, BMP NO-2 Residential Noise Management)

BMP Noise-4: Workers or contractors shall notify residents through flyers, mailers, or door-to-door notification of any work within 1000 feet of a residence that may cause excessive noise (Source: PMP).

BMP Air Quality-1: The access road and interior circulation routes associated with any project requiring continuous daily access for greater than 1 week shall be treated with a dust suppressant and maintained in such a manner as to insure minimum dust generation subject to the Air Quality Management District's dust regulations (Source: PMP).

BMP Air Quality-2: The following measures shall be implemented for all excavation activities:

- Active maintenance areas shall be watered at least twice per day unless soils are already sufficiently moist to avoid dust.
- Trucks hauling sediments and other loose material shall be covered or shall maintain at least two feet of freeboard.
- Tailgates of trucks shall be sealed.
- Trucks shall be brushed down before leaving the maintenance site.
- Unpaved access roads and staging areas that are being used for the maintenance activity shall be watered three times daily, or nontoxic soil stabilizers shall be applied to control dust generation.
- Paved maintenance site access roads shall be swept when visible soil material is carried onto the roadway.
- Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 mph (Source: SMP Provision numbers 5.1 and 5.2).

BMP Air Quality-3: No burning would be allowed on any project. Idling of internal combustion engines shall be held to an absolute minimum. All vehicles with internal combustion engines shall be fitted with spark arresters (Source: Water Supply Division No. 15.03).

BMP Air Quality-4: Rapid-cure asphalt shall not be used in accordance with BAAQMD, Regulations 8, Rule 15 (Source: Water Supply Division No. 15.03). No mitigation required.

BMP Air Quality-5: Some of the sediment removal sites could have sediment that is rich in organic matter decaying in an anaerobic condition, which generates assorted malodorous gases, such as reduced sulfur compounds. These sediments shall be handled in a manner that avoids impacting sensitive receptors.

1. The District shall avoid stockpiling potentially odorous sediments within 1000 feet of residential areas or other odor sensitive land uses.
2. Where appropriate, odorous stockpiles shall be disposed of at an appropriate landfill (Source: BMP Handbook AQ-4: Avoid Stockpiling Potentially Odorous Sediments).

Mitigation Measure Cultural Resources-1: If erosion was identified after a pipeline discharge event (as identified per BMP Hydrology-14), and a cultural or paleontological resource is found, a 50-foot perimeter around the area shall be marked off and the PMP Program Manager shall be contacted to coordinate with a professional archaeologist or paleontologist. If sensitive resources are identified by the archaeologist or paleontologist, the site shall be avoided or data collection shall be implemented, as recommended by an archaeologist or paleontologist, to retain and/or record the information contained in the site (Source: PMP).

Mitigation Measure Cultural Resources-2: The Standard Protocol to Determine Project Potential to Affect Cultural Resources shall be followed for any planned excavation involving hand or mechanical excavation in areas that: 1) more than 1 cubic meter of sediment would be disturbed; 2) have not been previously disturbed; 3) are beyond 3 feet from an existing facility; and 4) have been disturbed but not subject to any formal archaeological inquiry. The Bureau of Reclamation cultural resources specialist shall be notified three months prior to the proposed initiation date if the excavation is on the BOR-owned Santa Clara Conduit or Pacheco Conduit. The protocol is presented below.

Standard Protocol to Determine Project Potential to Affect Cultural Resources:

Prior to the initiation of a project that involves excavation (as defined above), the District would conduct a records search to determine whether known cultural resources occur within the project area and whether the project area has been previously studied. The record search can be conducted by District personnel through the Northwest Information Center of the California Historical Resource Information System, Sonoma State University, Rohnert Park. The record search would document cultural resources with a 0.25-mile radius of the project boundaries, and would obtain all pertinent cultural resources documents, maps, and records needed to assess the project area's potential to contain significant cultural resources.

A search of the Native American Heritage Commission Sacred Lands Files would also be conducted. The Commission would be asked to provide a list of Tribal Members who have expressed an interest in being consulted about local projects. The District's archaeologist would contact these individuals to notify them about the project and to request their input regarding potential areas of concern.

A cultural resource inventory (survey of the project area) would then be conducted if the record search results reveal that a survey has not been conducted or was conducted more than 20 years ago. This survey would document whether or not surface cultural materials (historic or prehistoric) are present within the project area. The results of the record search and, if needed, cultural resource

inventory then would be presented in a report to the District along with recommendations on how to proceed.

If a project entails excavation of subsurface sediments in an area classified as high-medium for buried cultural resources (see prior sensitivity discussion), then a professional archaeologist would be consulted as to the best course of action. This might entail preemptive backhoe work or monitoring of excavations to determine the presence or absence of buried resources.

If cultural resources are documented in the project area and cannot be avoided by the project, then they must be evaluated to determine whether they are significant and eligible for listing on the National Register of Historic Places or California Register of Historic Places. If an eligible historic property lies within the project area and cannot be avoided, then impacts to the resource must be mitigated. If ineligible historic properties are present in the project area, then no further action is necessary. Avoidance of cultural resources is always the preferred alternative at every stage of the process (Source: Adaptation of BMP Handbook CU-1: Review of Projects with Native Soil).

Mitigation Measure Cultural Resources-3: The Protocol for Unexpected Discovery of Archaeological Cultural Materials or Human Remains shall be followed for any project where an unexpected discovery is made.

In the event that an unanticipated archaeological resource is encountered during construction, work in the immediate vicinity of the find shall be halted until all requirements relating to archaeological discoveries have been satisfied. The construction supervisor must halt ground disturbing activities in the proximity (100 feet), secure from vandalism or further disturbance a "no work" zone utilizing appropriate flagging, and notify appropriate District staff. A qualified professional archaeologist should then be then notified and asked to evaluate the find and recommend further management actions.

The Consulting Archaeologist shall provide to the District and the Corps (and Bureau of Reclamation if the project is on the BOR-owned pipelines) written and digital photographic documentation of all observed materials. They would also discuss site constituent utilizing the guidelines for evaluating archaeological resources for evaluating the California Register of Historic Places and National Register of Historic Places to make recommendations concerning a site's eligibility to the State and National Registers. Based on the assessment, the District and Corps shall identify the appropriate CEQA (and potentially NEPA) and Section 106 cultural resources compliance procedure to be implemented.

If the find appears to not meet the California or National Register criteria of significance, and the Corps (and BOR, if applicable) archaeologist concurs with the Consulting Archaeologist's conclusions, construction shall continue while monitored by the Consulting Archaeologist. The authorized maintenance work shall resume at the discovery site only after the District has retained a Consulting Archaeologist to monitor and the Water Utilities Manager has received notification from the Corps to continue work. If the find appears significant, avoidance of additional impacts is the preferred alternative. The Consulting Archaeologist shall determine if adverse impacts to the resources can be avoided. When avoidance is not practical (e.g., maintenance activities cannot be deferred or they must be completed to satisfy the PMP objective), the District shall develop an Action Plan and submit it to the Corps (and BOR if applicable) within 48 hours of Consulting Archaeologist's evaluation of the discovery. The Action Plan is synonymous with a data-recovery

plan. It shall be prepared in accordance with the current professional standards and State and Federal guidelines for reporting the results of the work, and shall describe the services of a Native American Consultant and a proposal for curation of cultural materials recovered from a non-grave context. The recovery effort would be detailed in a report prepared by the archaeologist in accordance with current archaeological standards.

In the event of discovery of human remains (or the find consists of bones suspected to be human), the field crew supervisor shall take immediate steps to secure and protect such remains from vandalism during periods when work crews are absent). A District representative would immediately notify the Santa Clara County Coroner (or the Coroner in San Benito or Merced Counties, as appropriate) and provide any information that identifies the remains as Native American. If the remains are determined to be from a prehistoric Native American, or determined to be a Native American from the ethnographic period, the Coroner shall contact the Native American Heritage Commission (NAHC) within 24 hours of being notified of the remains. The NAHC then designates and notifies within 24 hours a Most Likely Descendant (MLD). The MLD has 24 hours to consult and provide recommendations for the treatment or disposition, with proper dignity, of the human remains and grave goods. Human remains shall be preserved in situ if continuation of the maintenance work, as determined by the Consulting Archaeologist and MLD, would not cause further damage to the remains (this is the preferred alternative). The remains and artifacts shall be documented and the find location carefully backfilled (with protective geo-fabric if desirable) and recorded in District project files.

In the event that human remains or burial associated items are exposed and cannot be protected from further damage, they shall be exhumed by the Consulting Archaeologist at the discretion of the MLD and reburied with the concurrence of the MLD in a place mutually agreed upon by all parties (Source: SMP Provision No. 7.2).

Mitigation Measure Paleo-1: If paleontological resources are discovered during excavation, all work shall be suspended in the immediate area and a qualified paleontologist shall be contacted to investigate and evaluate the discovery. If sensitive resources are identified, the site shall be avoided or data collection shall be implemented, as recommended by a paleontologist, to retain and/or record the information contained in the site (Source: PMP).

BMP Aesthetics-1: Avoid establishing staging areas within 500 feet of any scenic resources such as designated vista points along urban or rural trails, visible rock outcroppings, or designated historic buildings (Source: PMP).

Mitigation Measure Aesthetics-1: Follow-up maintenance shall be performed on sites that have been seeded and planted (Source: SMP Provision No. 2.9).

1. Maintenance shall include replacing dead or dying plants where appropriate, weeding, removing non-native plant colonizers, and ensuring that all plants receive sufficient water.
2. Irrigation shall be implemented as needed throughout the establishment period.

Mitigation Measure Aesthetics-3: Whenever possible, work hours should be limited to 7:00 A.M. to 7:00 P.M. Monday through Saturday. When subtasks such as repair have to be performed 24 hours per day, lighting shall conform to restrictions of the City where they occur (identified from

Table 5.9-1). Measures such as directing lighting downward and away from residences, reducing bulb wattage to the minimum required, and utilizing shrouds shall be implemented (Source: PMP).

Mitigation Measure Land Use-1: Prior to conducting maintenance activities that may require staging and access on private grazing lands or lands that support livestock, the District shall contact property owners to ensure that animals are moved or secured, if necessary. If any fences or gates must be utilized, District staff shall secure all gates after access or use temporary fencing and gates for any fences that need to be cut. The District shall repair any damage to fences after access, or renegotiate access with property owners per District easement contracts (Source: PMP).

Mitigation Measure Land Use-2: Prior to maintenance that may require access or staging in agricultural fields, the District shall contact property owners to be sure that access would not damage crops. If possible, access through agricultural fields shall be avoided during the growing season. If access is necessary, the District shall create a path of least effect to the crops and compensate farmers for any damage to crops pursuant to renegotiated terms or contingencies decided prior to work (Source: PMP).

Section 2. BMPs and Mitigation Measures Related to T&E Species

The following measures are those applicable to the T&E species and critical habitats that may be affected by the Proposed Action. These measures are incorporated into the Proposed Action from the District's PMP EIR and cover the entire PMP and the original numbers of each measure are preserved. These measures are hereby incorporated into the Proposed Action[1]. All reports will be provided to Reclamation after completion of the project.

BMP Hydrology-1: Access shall be provided as close to the work area as possible, using existing ramps where available and planning work site access so as to minimize disturbance to the creek bed, creek banks, and the surrounding land uses.

BMP Hydrology-3: Erosion control matting or fabric shall be installed if necessary.

BMP Hydrology-4: Temporary fills, such as for temporary roads, access ramps, diversion structures, or cofferdams, shall be removed upon finishing the work.

[1] It should be noted that in the EIR, many of these measures are named "mitigation measures." These names are retained in this EA, to maintain consistency between the two documents. However, Section 7 of the ESA requires Federal agencies to avoid and minimize effects and does not require "mitigation" in the form of compensation (such as land acquisition), unless it is necessary to avoid jeopardy or adverse modification or destruction, or if it actually reduces the level of take. Most of the "mitigation measures" listed below do serve to avoid or minimize take, with the exception of those that specify compensation for the loss of critical habitat or for the loss of vernal pool fairy shrimp habitat.

BMP Hydrology-5: Discharge volume reduction options (such as performing maintenance activities with partially full pipelines, employing sectioning valves, and/or opportunities for reuse of water) would be considered prior to draining the pipeline.

BMP Hydrology-6: Discharge rates would be ramped up slowly such that the increase in flow rate in the receiving water is gradual and scouring of the channel bed and banks does not occur.

BMP Hydrology-7: Flows would be diverted around sensitive, actively eroding, or extremely steep areas to prevent erosion. Flow diversion methods might include use of flexible piping and/or placement of sandbags to alter flow direction, or equivalent measures. The new flow path and discharge point would be monitored for signs of erosion.

BMP Hydrology-8: To protect exposed soil and vegetated surfaces from erosion, erosion control blankets, mats, or geotextiles would be placed over the erodible surface. A number of materials are available ranging from straw blankets to synthetic fiber with netting. The blanket can be removed following completion of the discharge or left in place to provide a more permanent means of erosion control. Instructions for installation can be found in the Construction Volume of the California Stormwater BMP Handbook (CASQA, 2003) or in the Water Utility Discharge Pollution Prevention Plan (WUDPPP).

BMP Hydrology-9: Velocity dissipation devices can be installed at frequently used discharge sites to reduce flow velocities and capture sediment. These devices typically combine plantings of willows with placement of angular stone riprap on top of filter fabric to create an apron at the discharge point. Where this BMP is recommended for permanent stabilization of existing erosion, minor grading may be necessary. Design and layout recommendations that appear in the Construction Volume of the California Stormwater BMP Handbook (CASQA, 2003) would be followed to the extent possible.

BMP Hydrology-10: Temporary flow path check filters can be placed at single or multiple locations along the flow path to remove sediment from discharges and slow the rate of flow. Check filters are constructed of rock, sandbags, fiber rolls, or equivalent materials, and would be installed following recommendations in the WUDPPP and Stormwater BMP Handbook (CASQA, 2003). Each check filter would be modified with a notch or low spot to direct the flow path and prevent discharges from flowing around the sides of the check filter. Sediment that becomes trapped behind the check filters would be carefully removed to avoid disturbing the channel or swale and disposed of appropriately. Flow path check filters are typically applied where discharges to upland areas are planned. In channel settings, the temporary installation of flow path check filters would likely require a Streambed Alteration Permit from the California Department of Fish and Game (CDFG) per Fish and Game code section 1602. This permit would require that certain provisions are followed, such as restricting use to only dry flow conditions.

BMP Hydrology-11: Streambank stabilization measures (such as biostabilization with willows plantings, hydroseeding, and placement of riprap) would be employed where excavation projects disturb stream channels and their associated riparian areas. Streambank stabilization measures would be site specific and may be described in the Streambed Alteration Permit. Design and installation recommendations for several methods are described in the Stormwater BMP Handbook (CASQA 2003).

BMP Hydrology-12: Existing access ramps and roads to streams shall be used where possible. If temporary access points are necessary, they shall be constructed in a manner that minimizes impacts to streams.

BMP Hydrology-13: Where practicable, maintain a vegetated buffer strip between staging/excavation areas and receiving waters.

BMP Hydrology-14: Erosion control measures shall be utilized throughout all phases of the operation where sediment runoff from exposed slopes threatens to enter waters of the State. At no time shall silt laden runoff be allowed to enter water of the State.

BMP Hydrology-20: A trained individual would observe flows in the receiving water. If it appears that discharges are approaching bankfull (associated with the flow that just fills the channel to the top of its banks and at a point where the water begins to overflow onto a floodplain) in the channel or any structure within the channel, discharge rates would be reduced.

BMP Hydrology-15: RWQCB objectives for temperature change in receiving waters (measured 100 feet downstream of discharge point) shall not be exceeded. Receiving water and discharge water may be monitored for temperature changes after a comparison of ambient temperature to pipeline water temperature suggests the potential for change.

BMP Hydrology-18: Receiving water may be monitored for dissolved oxygen and pH to ensure that relevant Basin Plan standards are not violated for at least the initial release in each receiving water body or as required in NPDES permits issued by the RWQCB. Data shall be reported to the RWQCB as required.

Mitigation Measure Hydrology-1: For all exposed earthen areas, once the maintenance activity is complete or during the appropriate time of year, an erosion control seed mix shall be used, compatible with the surrounding environment. The mix would consist of California native grasses (e.g., *Hordeum californicum*, *Elymus glaucus* 'Berkeley', *Bromus carinatus*) on slopes flatter than 3:1. 'Zorro' Annual Fescue would be added to the mix where slopes are steeper (e.g., 2:1). Erosion control matting or fabric shall be installed if necessary.

Mitigation Measure Hydrology-2: The WUDPPP Guidance Manual (SCVWD 2001c) shall be followed for all discharges as appropriate. To minimize erosion, the Erosion Control BMPs shall be implemented as directed by the WUDPPP.

Mitigation Measure Hydrology-3: The discharge location and receiving water would be observed for signs of erosion by a trained individual. If erosion is evident, flow rates would be reduced. If erosion continues to occur, discharges would be terminated until appropriate erosion control BMPs are installed. Monitoring would be conducted just prior to the start of the discharge and regularly (i.e., every hour, every four hours, every eight hours) during the discharge. Monitoring frequency would depend on the nature of the discharge and the erosion in the area.

Mitigation Measure Hydrology-4: An environmental monitor would walk along each discharge drainage to the termination of the drainage or 500 feet downstream to inspect for erosion after a draining is complete. If erosion is detected, reclamation measures should be taken to correct the erosion. Correction measures shall include recontouring the land to its previous state and revegetating with the dominant native grass species in the area, if necessary. [Source: PMP]

Mitigation Measure Hydrology-5: Prior to any ground disturbing work the District shall prepare an Erosion Control Plan to be included in the Excavation Plan. At a minimum, the plan shall include:

- A proposed schedule of grading activities
- Identification of any critical areas of high erodibility potential and/or unstable slopes
- Contour and spot elevations indicating runoff patterns before and after grading
- Identification of erosion control measures on slopes, lots, and streets. Measures would be based on recommendations contained in the "Erosion and Sediment Control Field Manual" published by the San Francisco RWQCB (SFRWQCB 2002). Erosion control measures such as placement of silt fencing or straw waddles shall be utilized to prevent sedimentation from runoff from graded surfaces into any waterways or wetlands.
- Soil stabilization techniques such as short-term biodegradable erosion control blankets and hydroseeding
- Post excavation inspection and cleaning of drainage facilities for accumulated sediment

Mitigation Measure Hydrology-6: RWQCB objectives for turbidity in receiving waters (measured 100 feet downstream of project site in streams and 50 feet downstream in lakes) shall not be exceeded[2]. Receiving water and discharge water would be monitored by a trained individual for turbidity prior to the discharge and periodically throughout the drainage operation. Silty or turbid water from project activities shall not be discharged into streams, lakes, or storm drains. Such water shall be treated prior to release by one of the following methods:

- Sprayed over a large area outside of the stream channel to allow for natural filtration of sediments
- Discharged to the sanitary sewer system (requires approval from local sanitary district)
- Treated with an on-line filter system or storm drain inlet protection
- Pumped into a holding facility or into a settling pond located in a flat stable area

BMP Biology-1: Woody material (including live leaning trees, dead trees, tree trunks, large limbs, and stumps) would be retained unless it is threatening a structure or impedes reasonable access, in which case it would be retained on site but moved to a less threatening position.

BMP Biology-2: All trash would be removed from the site daily to avoid attracting potential predators to the site.

BMP Biology-3: Building materials and construction materials would not be stockpiled or stored where they could be washed into the water or where they would cover aquatic or riparian vegetation.

BMP Biology-4: To prevent inadvertent entrapment of animals during excavation, all excavated, steep-walled holes or trenches more than 2-feet deep would be covered at the close of each working

[2] In the Central Coast (Region 3): where natural turbidity is between 0 and 50 JTU, increases shall not exceed 20 percent; where natural turbidity is between 50 and 100 JTU, increases shall not exceed 10 JTU; and where natural turbidity is greater than 100 JTU, increases shall not exceed 10 percent (CCRWQCB 1994). Turbidity objectives in the Central Coast Basin Plan are expressed in the no longer used Jackson turbidity units (JTU). Nephelometric turbidity units (NTU) are approximately equal (but not identical) to JTU.

day by plywood or similar materials ensuring no gaps around the edges or contact seam of the board and the earth, or provided with one or more escape ramps constructed of earth fill or wooden planks. In addition, these structures would be thoroughly inspected by properly trained construction personnel each morning for wildlife species. Before such holes or trenches are filled or covered, they would be thoroughly inspected for trapped animals.

Mitigation Measure Biology-1: If the biologist notes potential wetland areas, placement of fill within the potential wetland areas would be avoided if possible (such as by moving the road, etc.). If avoidance is not possible an ACOE jurisdictional wetland delineation would be performed according to the 1987 wetland delineation manual and the appropriate Section 404 and 401 processes followed. Placing fill within a jurisdictional wetland would require implementation of mitigation as included in the ACOE and RWQCB permits and may include local wetland enhancement, replacement, or creation of wetlands at a location approved by the appropriate regulatory agencies, such as Calero Creek.

Mitigation Measure Biology-2: All potential excavation (for pipeline components or for access roads) would be detailed in the project specific *Excavation Plan* as described in the PMP. All proposed excavation areas for either pipeline component repairs/replacements, bank stabilizations or access road repairs or reconstructions would be surveyed by a qualified biologist for potential wetland areas.

Mitigation Measure Biology-3: In defining laydown areas and access, the District shall use its GIS database to identify serpentine areas near work areas and avoid and minimize impacts to all stands of native vegetation that may provide suitable habitat for special-status plants and invertebrates to the greatest extent possible. No staging shall occur on open soils known to be serpentine and operation of maintenance equipment should be limited to established roads whenever possible.

Mitigation Measure Biology-7: All off-road access routes to vaults or other service areas would be surveyed and delineated by a biologist prior to use. The access roads would be flagged such that sensitive plant species, vernal pools (potentially occurring in rural areas), and animal burrows are avoided. Routes would be limited to not more than 15 feet wide. Personnel would be required to adhere to marked paths. No other off-road travel would be allowed.

Mitigation Measure Biology-8: For any staging and access and/or excavation in any critical habitat area, a biological monitor would be present to oversee work. The monitor would have the authority to stop operations if any threat to critical habitat is presented.

Mitigation Measure Biology-12: For any staging, access, and excavation activity, the District would implement the District's Nesting Bird Procedures, (included in the PMP). The Nesting Bird Procedures ensure no adverse impacts to any migratory bird species as protected under the Migratory Bird Treaty Act of 1918, including all federal and state listed sensitive bird species. The Nesting Bird Procedures are summarized below:

- Migratory bird surveys would be performed prior to any project-related activity that could pose the potential to affect migratory birds. Affected areas would be inspected/monitored prior to commencement of the nesting season, and as frequently as necessary thereafter, to provide deterrence measures and prevent nesting by birds. Inactive bird nests may be removed, with the exception of raptor nests. During the nesting season, all project areas

that may be impacted by construction, including all vegetation, grounds, and bridge(s), would be inspected with sufficient frequency as needed, to identify any new and partially built nests. No birds, nests with eggs, or nests with hatchlings shall be disturbed.

- Vegetation can be cleared and maintained to prevent migratory bird nesting. All necessary vegetation clearing would be performed prior to the nesting season, if at all possible. No vegetation would be trimmed back unnecessarily, including trees and/or shrubs growing near the right of way, which overhang onto the work site.
- Nesting exclusion devices may be installed to prevent potential establishment or occurrence of nests in areas where construction activities would occur. All nesting exclusion devices would be maintained throughout the nesting season, or until completion of work in an area makes the devices unnecessary. All exclusion devices would be removed and disposed of when work in the area is complete.

Mitigation Measure Biology-14: This BMP would be implemented for any staging and off-road access, and excavation within San Joaquin kit fox habitat (along the Santa Clara Conduit and Pacheco Conduit) (adopted from Reclamation's O&M BO and the *Standardized Kit Fox Construction Practices* developed by the Service (1997), except that the 20-mph speed limit is changed to 15 mph, the standard for District unpaved roads.

- A qualified biologist would conduct pre-construction presence/absence surveys for kit fox no less than 14 days and no more than 30 days prior to any construction-related activities. The primary objective is to identify kit fox habitat features (potential dens and refugia) on the project site and evaluate them sufficiently to ascertain if they are in use by a kit fox. If an active kit fox den is detected within (or immediately adjacent to) the area of work, the Service would be contacted immediately to determine the best course of action. If no kit fox activity is detected, the work shall continue as planned and a written report would be submitted to the Service within five days after completion of the surveys.
- All construction-related activities should be preceded by a tail-gate training session, the primary purpose of which would be to describe to construction workers the importance of implementing construction related activities that would minimize potential construction related impacts to kit foxes.
- Project-related vehicles should observe a 15-mph speed limit in all project areas, except on city or county roads; this is particularly important at night when kit foxes are most active. To the extent possible, nighttime construction and traffic should be avoided. Off-road traffic outside of designated project areas is unacceptable.
- To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of the project, all excavated, steep-walled holes or trenches more than 2-feet deep would be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. In addition, these structures would be thoroughly inspected by properly trained construction personnel each morning for kit fox or other species. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals.
- All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods would be thoroughly inspected by properly trained construction personnel for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in anyway. If a kit fox is discovered inside a pipe, that section of pipe would not be moved until the Service has been

consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity.

- All food related trash items such as wrappers, cans, bottles, food scraps would be disposed of in a closed container and removed at least once a week from a construction or project site and signs would be placed at the construction site that prohibit feeding wildlife.
- No firearms would be allowed on the project site.
- To prevent harassment, mortality of kit foxes or destruction of dens by dogs or cats, no pets would be permitted on project sites.
- Use of rodenticides and herbicides in project areas would be restricted.
- A representative would be appointed by the project proponent who would be the contact person for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped individual (the representative's name and address shall be provided to the Service).
- Upon completion of the project, all areas subject to temporary ground disturbance, including storage and staging areas, temporary roads, pipeline corridors, etc. would be re-contoured if necessary, and revegetated to pre-project conditions.
- In the case of trapped animals, escape ramps or structures would be installed immediately to allow the animal(s) to escape, or the Service should be contacted for advice.
- Any contractor, employee(s), or military or agency personnel who inadvertently kill or injures a San Joaquin kit fox would immediately report the incident to their representative. This representative shall contact the CDFG immediately in the case of a dead, injured, or entrapped kit fox. The CDFG contact for immediate assistance is State Dispatch at (916) 445-0045.

Mitigation Measure Biology-15: Discharges that must occur into a seasonal wetland during the dry season (between May 1st and October 31st) would be conducted after the area is surveyed by a qualified biologist for evidence of desiccated or active vernal pools. The surveys would be conducted within one week of scheduled discharge. If the discharge area is identified as a desiccated vernal pool with potential for fairy shrimp cysts, the water would not be discharged into the pool. The pump-out discharge point would either not be utilized or an alternative method or areas for discharge would be implemented. Options such as using a hose to transfer the discharge water to another location would be implemented.

Mitigation Measure Biology-16: Pipeline discharge for maintenance work would preferentially be performed during winter months, when storm events are more common and when water is naturally highest. Discharge flows are then a minimal portion of overall stream or river flow. If draining must occur during summer or fall, a slow release is mandatory to ensure receiving waters do not experience a temperature change greater than 2 degrees (Jennings, personal communication 2006). Fahrenheit in either direction, and overall receiving water does not exceed 68 degrees Fahrenheit in steelhead and Chinook salmon inhabited streams.

Mitigation Measure Biology-17: Temporary fish screens shall be applied to any secondary or side channel that could uptake pipeline flows, causing attractant flows that would subside once draining is complete. The key locations include along Ross Creek at the Almaden Valley Pipeline, along the Guadalupe secondary channel along the Central Pipeline. Flows from the Cochrane channel to Coyote Creek should be directed into the creek and controlled during high flow conditions when secondary channels may occur or can form easily. Screens would be periodically monitored for

debris, and constructed with a second layer of plastic construction fencing on the side exposed to the fish. Exotic species trapped by the screening would be removed from the wild.

Mitigation Measure Biology-18: In areas where temporary velocity dissipation devices or temporary spreader dams are proposed for installation, the area would first be surveyed by a qualified biologist to ensure that no steelhead or Chinook salmon fry or eggs; no California red-legged frog eggs or larvae; and no California tiger salamander eggs or larvae are present within 500 feet upstream and downstream of the proposed structure (within the stream channel). If fry or eggs are found and could be impacted by placement of flow dissipation BMPs, then the discharge point would either not be used, be redirected upstream in a cleared area (such as with a hose), or discharge would not occur until the eggs and/or fry have moved from the area.

Mitigation Measure Biology-19: If a pipeline water discharge is scheduled to occur from January through August along any of the pipelines where there is potential California tiger salamander, California-red legged frog, and/or foothill yellow legged frog habitat, a survey for the species with potential to occur would be performed by a qualified biologist within 1 week prior to release. If California tiger salamander, California red-legged frog, or foothill yellow-legged frog eggs or larvae are not found within 500 feet upstream or downstream of the release point, absence would be re-verified within 24 hours of installation of BMP's and commencement of release. Release can commence if no eggs or larvae are found 500 feet upstream or downstream during the second survey. BMPs that control velocity (velocity dissipation) and flow rate would be implemented in any area with potential Special-Status amphibian habitat. If eggs or larvae are found within 100 feet downstream of a release point, the discharge point would not be utilized, if possible. Velocity reduction can be accomplished either by slowing release, decreasing release volume at the point, and/or applying dissipation in the immediate area of the discharge point as long as dissipation devices would not affect any adult Special-Status amphibians, their eggs, or larvae. A qualified biologist would oversee implementation of Mitigation Measure Biology-19.

Mitigation Measure Biology-20: During pipeline draining, mesh screens, adhering to Fish Screen Criteria (Appendix G of the PMP), which list specific mesh sizes, would be placed over the discharge openings of gravity drain gates and on the suction and discharge piping of any submersible pumps used for pipeline discharge to minimize discharge of species, if the water is discharged to a stream that does not regularly receive imported water directly for recharge. It may be necessary to place fish containment screens in side channels that are examined throughout the draining process to remove introduced fish and maintain function against debris clogging. Structures that have historically discharged reservoir water imported from the Delta are exempt from this measure.

Mitigation Measure Biology-21: A qualified biologist would survey the excavation construction area for vernal pools within 30 days of excavation. If vernal pools are located within the project footprint, the footprint would be adjusted to exclude the vernal pool area, if possible. Construction or reconstruction of an access road would be routed completely around the vernal pool by at least 100 feet. The vernal pool outer boundary would be flagged with pin flags and posted (outside the pool area) as an exclusion area. No activity (including walking through the area) would be permitted.

Mitigation Measure Biology-22: If a pipeline segment or feature (such as a vault) is located under a vernal pool and requires excavation through the vernal pool, compensation would be provided for following the standard mitigations 2:1 preservation and 1:1 creation, or the protocol in use at the time.

BMP Hazards-4: Measures shall be implemented to ensure that hazardous materials are properly handled and the quality of water resources is protected by all reasonable means.

- Prior to entering the work site, all field personnel shall know how to respond when toxic materials are discovered.
- The discharge of any hazardous or nonhazardous waste as defined in Division 2, Subdivision 1, Chapter 2 of the California Code of Regulations shall be conducted in accordance with applicable State and federal regulations.

Mitigation Measure Biology-24: If excavation were to occur along any pipeline within potential California tiger salamander or California red-legged frog habitat the area would be surveyed, according to current agency protocols by a qualified biologist, for presence of California tiger salamanders and California red-legged frogs prior to excavation, including excavation within stream banks, and excavation for laying or filling road material. Any burrows within the construction footprint of areas that are determined to have suitable habitat and potential for occurrence of California tiger salamanders or California red-legged frogs as determined through habitat reconnaissance surveys shall be examined for individuals following recommendations of the CDFG and/or USFWS or protocol surveys, as appropriate. If any individuals are found, a qualified biologist would remove them to suitable habitat outside of the project limits. Moving animals would be consistent with applicable Fish and Wildlife Service and Fish and Game permits.

Mitigation Measure Biology-25: If access road reconstruction or repair is necessary within any critical habitat area for California tiger salamander the amount and type of area that must be filled would be quantified to determine if the area supports the primary constituent elements. If the impact is temporary then restoration measures would be used to restore the value of the temporarily disturbed area. If the impact is permanent and impacts to critical habitat (i.e., presence of the primary constituent elements) are to occur then a similarly valued area at a 3:1 ratio would be preserved within a critical habitat unit. The District would 1) avoid road reconstruction or repair, whenever feasible, in areas with known estivation habitat. Roads would be moved to a new alignment or decommissioned if the option is feasible. If avoidance is not feasible, compensation as described above would be implemented; 2) minimize impacts by conducting any such work during times the species is least likely to be negatively impacted, and/or using fencing to keep the species away from the construction zone; 3) restore impacted areas to pre-work conditions; and finally 4) if unable to accomplish 1 thru 3; any residual effect would be compensated for following the above approach.

Mitigation Measure Biology 26: If the District were to shut down a pipeline during a drought year, or during a time period when pipeline flows are necessary to augment stream flows, then an alternative source of water would be identified before shutdown commences. Alternative sources of water would come from the following locations, in order of priority:

- Other raw water sources, such as another pipeline
- Well water from a retailer
- Dechlorinated municipal water piped to the site from the nearest hydrant or other repository

The alternative water source must provide sufficient flows to keep water flowing within the creek. The volume and rate of alternative flow necessary for any given project would depend on the receiving creek morphology, the weather, and the fishery, if any. Qualified District personnel

(biologists, civil engineers, etc.) would determine the necessary alternative flow volume and rate depending on the stream channel size, the existing flow, and the fishery. Creeks would likely require a minimum of 1 cfs flowing in them (either with natural flows, with augmented flows, or a combination of natural and augmented flows), although some creeks may require more.

If natural flows increase during the shutdown period and can provide the determined necessary minimum channel flow (as previously defined by a District biologist and/or civil engineer), then the District can terminate the alternative source.

If dechlorination of municipal water is used, the District shall make agreements with the municipality prior to pipeline shutdown, with the estimated maximum flow and volume that could be needed to ensure flow can be sustained throughout the shutdown. Water would be dechlorinated following BMP Hydrology 16, BMP Hydrology-17, and BMP Hydrology-18.

Mitigation Measure Biology-27: The District would follow all BMPs outlined in their 2003 Comprehensive List that pertain to the San Jose Riparian Corridor Policy.

Additionally, pursuant to the District's Comprehensive BMPs:

- The District would strive to minimize vegetation removal and would revegetate sites as appropriate to provide erosion control and restore riparian habitat value.

If removal of trees cannot be avoided, then these additional mitigations would be implemented:

- A qualified botanist would conduct a pre-staging tree survey in order to identify species and circumference at appropriate heights, of all trees to be removed or impacted by staging and/or access activities. Once the survey is completed, a restoration plan would be developed that indicates the ratio, location, and species of trees to be planted.
- Trees would be replaced at acceptable ratios set forth by the appropriate agency. Planting stock would be collected locally (within a 5-mile radius of the project site) to the extent possible in order to maintain genetic integrity of the species to be replaced and planting would be completed during the period between November and January. New plantings would be installed in an environment suitable for their establishment and growth and would be maintained, including protection from invasive species and deer browsing, and irrigated for a period of not less than three years.
- For trees remaining in the vicinity of the project site, problems of soil compaction resulting from project maintenance activities need to be prevented. In order to minimize impacts to remaining trees, fencing would be installed around the edge of the tree canopy or at the edge of the construction areas.

BMP Hazards-1: Smoking shall be prohibited except in designated staging areas and at least 20 feet from any combustible chemicals, dry grass, or vegetation. Smoking shall be prohibited in pipeline or near the repair surface.

BMP Hazards-2: All heavy equipment and rubber-tired construction vehicles used for off-road access in rural environments shall be equipped with fire extinguishers. All rubber-tired construction

vehicles used for off-road access in rural environments shall be equipped with appropriate firefighting equipment, such as shovels and axes or pulaskis, to aid in the prevention or spread of fires. All construction equipment shall be equipped with the appropriate spark arrestors and functioning mufflers.

BMP Hazards-3: An extinguisher shall be available at the project site at all times when welding or other repair activities that can generate sparks (such as metal grinding) is occurring.

BMP Hazards-5: Spill prevention kits shall always be in close proximity when using hazardous materials (e.g., crew trucks and other logical locations).

- Prior to entering the work site, all field personnel shall know the location of spill kits on crew trucks and at other locations within District facilities.
- All field personnel shall be advised of these locations and trained in their appropriate use.

BMP Hazards-6: All equipment would be properly maintained and inspected for leaks daily before start of work.

No fueling shall be done in a stream channel or immediate flood plain, unless equipment stationed in these locations is not readily relocated (i.e., pumps, generators).

- For stationary equipment that must be fueled on-site, containment shall be provided in such a manner that any accidental spill of fuel shall not be able to enter the water or contaminate sediments that may come in contact with water.
- Any equipment that is readily moved out of the channel shall not be fueled in the channel or immediate flood plain.
- All fueling done at the job site shall provide containment to the degree that any spill shall be unable to enter any channel or damage stream vegetation.

BMP Hazards-7: The District shall prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels. District vehicles shall be washed only at the approved area in the corporation yard.

- Field personnel shall be appropriately trained in spill prevention, hazardous material control, and clean up of accidental spills.
- No fueling, repair, cleaning, maintenance, or vehicle washing shall be performed in a creek channel or in areas at the top of a channel bank that may flow into a creek channel.

BMP Hazards-8: No washing of vehicles shall occur at job sites.

BMP Hazards-9: Debris, soil, silt, bark, rubbish, creosote-treated wood, raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to aquatic life, shall be prevented from contaminating the soil and/or entering the waters of the state. Any of these materials, placed within or where they may enter a stream or lake shall be removed immediately.

BMP Hazards-10: All equipment shall be stored in a secure area away from the channel. Quantities greater than 55 gallons would be provided with a secondary containment capable of containing 110 percent of the primary container. During the period between October 15 and April 15 (and depending on rain patterns, could include before and after these dates as well), all equipment fluid storage areas would be provided with an impermeable cover to prevent contact with storm water.

Mitigation Measure Hazards-1: During the planning phase for activities that involve discharge, project coordinators shall contact the group implementing the pesticide application to verify that no temporal or spatial overlap in discharge and pesticide application would occur. Information on pesticide application should be included in the project-specific draining plan.

BMP Noise-1: Workers or contractors shall carry noise abatement devices or equipment to construct a noise abatement device for work that must be performed outside of normally allowed operating hours, either between 7:00 a.m. and 7:00 p.m. or as dictated by local code. Equipment to construct a noise abatement device could include large pieces of plywood, insulating material, egg carton material, etc.

BMP Noise-2: District staff shall keep noise from construction activities as low as possible. In no case shall noise levels produced by the Contractor exceed any of the following maximums:

- No individual piece of equipment shall produce a noise level exceeding 83 dBA at a distance of 25 feet.
- The noise level at any point outside of the property line or temporary construction area shall not exceed 86 dBA during work hours or 60 dBA during nonworking hours. No equipment violating these standards would be allowed to operate.

The District staff shall contact the local jurisdiction to determine what, if any, additional noise or equipment limitations apply and shall conform to those regulations as well.

Mitigation Measure Noise-1: Work shall not be conducted between the hours of 7:00 p.m. and 7:00 a.m. or on Sundays, except when/where the nature of the activity requires work beyond this timeframe or where a local jurisdiction has more stringent work hour requirements. Activities shall comply with any additional requirements of the local jurisdiction regarding hours of construction. Permits for exceptions to noise ordinances shall be obtained as appropriate.

Mitigation Measure Aesthetics-2: The District shall replace trees as follows:

- Native trees that are lost to bank protection impacts shall be replaced at a 3:1 ratio and non-native trees that are lost shall be replaced at a 2:1 ratio.
- Trees removed for any maintenance work shall be replaced at the site, if feasible.
- Replacement of heritage-sized trees (greater than 18 inches diameter at breast height (dbh)) would be consistent with local ordinances.

Appendix C – U.S. Fish and Wildlife Service Biological Opinion

United States Department of the Interior
U.S. FISH AND WILDLIFE SERVICE
Ecological Services
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003

IN REPLY REFER TO:
2022-0005995

March 7, 2022

Memorandum

To: Rain Emerson
Chief, Environmental Compliance
Bureau of Reclamation, South-Central California Area Office
1243 N Street
Fresno, California 93721

JENNY MAREK Digitally signed by JENNY MAREK
Date: 2022.03.07 18:29:00 -08'00'

From: Field Supervisor, Ventura Fish and Wildlife Office, U.S. Fish and Wildlife Service, Ventura, California

Subject: Biological Opinion on Santa Clara Conduit Inspection and Rehabilitation and Pacheco Conduit Sectionalizing Valve and Acoustic Fiber Optic Repair Project (19-064), San Benito, Santa Clara, and Merced Counties

Dear Rain Emerson:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion based on our review of the Bureau of Reclamation's (BOR) proposed Santa Clara Conduit Inspection and Rehabilitation and Pacheco Conduit Sectionalizing Valve and Acoustic Fiber Optic Repair Project (project) and its effects on the federally threatened California red-legged frog (*Rana draytonii*) and California tiger salamander (Central California Coast distinct population segment) (*Ambystoma californiense*) in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 et seq.). In addition, you requested informal consultation for the project's potential effects on the endangered San Joaquin kit fox (*Vulpes macrotis mutica*), endangered least Bell's vireo (*Vireo bellii pusillus*), critical habitat for California red-legged frog and critical habitat for California tiger salamander, Central California Coast distinct population segment. We received your March 8, 2021 request for formal consultation on March 9, 2021.

In considering your request, we based our evaluation on the following: (1) the March 8, 2021, letter from BOR requesting formal consultation; (2) the August 2012 Final Santa Clara Valley Habitat Plan (SCVHP) (http://scv-habitatagency.org/178/Final-Habitat-Plan); (3) the Biological Assessment for Santa Clara Conduit Inspection and Rehabilitation and Pacheco Sectionalizing Valve and Acoustic Fiber Optic Repair Project; (4) the March 3, 2021 memorandum (revised

March 16, 2021) from Valley Water "Section 7 Consultation: SCC Inspection and Rehabilitation and Pacheco Sectionalizing Valve and Acoustic Fiber Optic Repair Project"; (5) the August 20, 2021 Addendum to the Biological Assessment Santa Clara Conduit Inspection and Rehabilitation and Pacheco Sectionalizing Valve and Acoustic Fiber Optic Repair Project; (6) communications among BOR, Valley Water, Santa Clara Valley Habitat Agency, and the Service; and (7) other information available to the Service.

You requested our concurrence with your determination that the proposed action would have "no effect" on the California condor (*Gymnogys californianus*), southwestern willow flycatcher (*Empidonax traillii extimus*), blunt-nosed leopard lizard (*Gambelia silus*), vernal pool fairy shrimp (*Branchinecta lynchi*), Bay checkerspot butterfly (*Euphydryas editha boyensis*), and marsh sandwort (*Arenaria paludicola*). The regulations implementing section 7(a)(2) of the Endangered Species Act (50 Code of Federal Regulations (CFR) 402) do not require our concurrence with a "no effect" determination made by a Federal agency thus, we do not provide concurrence for no effect determinations.

Not Likely to Adversely Affect Determinations

The BOR request for consultation also included the determination that the proposed action may affect but is not likely to adversely affect the federally endangered San Joaquin kit fox, endangered least Bell's vireo, critical habitat for California red-legged frog, and critical habitat for California tiger salamander, Central California Coast distinct population segment (DPS). BOR's not likely to adversely affect determination for these species is limited to the portion of the project within San Benito County. Effects to these species occurring within Santa Clara County portion of the project have been analyzed as a part of the intra-Service consultation for the Santa Clara Valley Habitat Plan (SCVHP), which we incorporate by reference (Service 2013, pp. 186-189, 193-195, 231-235, 243-247). Although the intra-Service consultation includes formal consultation on effects of the SCVHP's covered activities to critical habitat for the California red-legged frog and the California tiger salamander, BOR has determined that the proposed action is not likely to adversely affect critical habitat for both species within Santa Clara and San Benito Counties.

<u>Avoidance and Minimization Measures for San Joaquin kit fox in San Benito County:</u>

- Valley Water will limit dewatering activities to the month of November. It is possible dewatering could extend into the first week of December if unforeseen issues are encountered.

- Valley Water will use local streets, highways, and the existing access roads to the extent possible for vehicle access to work areas. If off-road access is required, a Service-approved biologist will clearly demarcate the access route. In these cases, access routes will be limited to a width of 15 feet or less. Valley Water personnel will adhere to marked paths and no other off-road travel will be allowed.

- Valley Water will limit all vehicle traffic on unpaved roadways to a speed of 10 miles per hour and lower to address nighttime work for dewatering or dewatering during precipitation events.

- A Service-approved biologist will determine the need to monitor for listed species by assessing each site for potential habitat and species activity. When project activities have the potential to affect listed species a qualified biologist will be present on-site during all work activities in San Benito County to ensure implementation of avoidance and minimization measures. The biologist(s) will have the authority to stop work if there is threat of harm to listed species or if any measures are not being fulfilled, and will notify BOR and the Service within 1 day of any work stoppage.

- Prior to the start of construction activities, a Service-approved biologist will provide training to all construction personnel. At a minimum, training will include information on identifying San Joaquin kit fox, their ecology and habitat requirements, the boundaries within which the project must be accomplished and vehicle travel restrictions, the avoidance and minimization measures to be followed, as well as proper procedures for staff if any San Joaquin kit fox are detected within the project area. Training will also be required of new or additional personnel before they are allowed to access the project site. Photographs of San Joaquin kit fox will be distributed to all workers and contractors as a part of this training.

- A Service-approved biologist will conduct camera trap surveys following Service guidance (Appendix A) prior to the start of project activities.

- A Service-approved biologist will monitor for San Joaquin kit fox on the morning before the start of daily work. If a San Joaquin kit fox or any animal that construction personnel believes may be a San Joaquin kit fox is encountered during project construction, the following protocol will be followed:
    - All work that could result in direct injury, disturbance, or harassment of the animal shall immediately cease.
    - The foreman and on-site biologist shall be immediately notified.
    - The on-site biologist shall immediately notify the Service via electronic mail when a San Joaquin kit fox is encountered that may be in harm’s way.
    - The species will be allowed to leave the work site on their own volition.

- If Valley Water discovers a suitable San Joaquin kit fox den in the project footprint, a Service-approved biologist will monitor the den for 3 days using a tracking medium or an infrared beam camera to determine if a San Joaquin kit fox is currently using the den. If the Service-approved biologist observes San Joaquin kit fox activity at the den during the initial monitoring period, they will monitor the den for an additional 5 consecutive days from the time of the first observation to allow any resident animals to move to another den.

- If Valley Water identifies an active or suitable den within the project footprint or outside the project footprint but within a 250-foot buffer, the Service-approved biologist will demarcate exclusion zones around each den entrance or cluster of entrances. The configuration of exclusion zones will be circular, with a radius measured outward from the den entrance(s). No project activities will occur within the exclusion zones. Exclusion zone radii for atypical dens and suitable dens will be at least 50 feet and exclusion zone radii for dens will be at least 100 feet. The Service-approved biologist will demarcate the exclusion zone using flagged stakes that does not prevent access to the den by San Joaquin kit foxes.

- If a natal or pupping den is found, Valley Water will immediately notify BOR, the Service, and California Department of Fish and Wildlife (CDFW).

- Valley Water will avoid nighttime construction except for dewatering activities. Any night lighting will be shielded, downward directed, and illuminate only the work area.

- Valley Water will store all chemicals at staging areas in secondary containment with no less than 110 percent capacity. Valley Water will implement proper storage and security to ensure that chemicals are not spilled or vandalized during non-working hours.

- Valley Water will prohibit firearms on the project site, except for Federal, State, local law enforcement, or security guards.

- Valley Water will prohibit pets at the project site.

- Valley Water will minimize disturbances to San Joaquin kit fox habitat to the extent feasible. Vehicle traffic will be restricted to established roads and designated areas and utilize previously disturbed areas to the extent practicable. Vehicle use areas will be included in preconstruction surveys.

- Valley Water will dispose of all litter and construction debris off-site in accordance with State and local regulations. All trash and debris within the work area will be placed in containers with secure lids before the end of each workday in order to reduce the likelihood of predators being attracted to the site by discarded food wrappers and other

rubbish that may be left on-site. If containers meeting these criteria are not available, all rubbish would be removed from the project site at the end of each workday.

- Valley Water will avoid the introduction and spread of invasive animal and plant species to the maximum extent practicable. To avoid the spread of aquatic invasive animals Valley Water will use screens and geotextile bags during pipeline draining. The spread of invasive plants will be avoided by cleaning all equipment prior to entering project sites and sanitizing vehicles, equipment, clothing, and other materials to avoid the spread of Phytophthora.

- Valley Water will securely cap all construction pipes, culverts, or similar structures that are stored at a construction site prior to overnight storage to prevent San Joaquin kit fox from taking refuge or becoming entrapped in these structures.

- The Service-approved biologists or the construction foreman or manager will thoroughly inspect all construction pipes, culverts, or similar structures before work crews bury, cap, or otherwise use or move the pipe in any way.

California Natural Diversity Database contains only one record of the species in San Benito County from 1971, which occurred across major highways (Highway 152 and 156), approximately 5.82 miles northeast and 6.99 miles southeast from the project (CNDDB 2022). Biologists conducted surveys in 2016 (H. T. Harvey & Associates 2016) and 2021 (Valley Water 2021) and found no evidence of San Joaquin kit fox presence within the action area. The grassland habitat near the Santa Clara and Pacheco Conduits, in the project vicinity along Highway 152 in the Pacheco Creek/San Felipe Lake area is dispersal habitat for San Joaquin kit fox. Habitat within and in the areas surrounding the project area is low quality, and it is very likely that only dispersing individuals could potentially move through habitat in and around the project area. San Joaquin kit foxes disperse an average of 4.8 miles, although they have been documented making long distance dispersals of between 25 to 50 miles. Therefore, we expect potential occasional dispersants from Central Valley populations to occur in this portion of the project area.

After reviewing the information provided, we concur with your determination that the proposed action may affect, but is not likely to adversely affect the San Joaquin kit fox. Our concurrence is based on the following:

1. There is a low likelihood for San Joaquin kit fox to be present in the project area.

2. The habitat within the project area is of low quality.

3. Valley Water will implement conservation measures as a part of the proposed project that will avoid take of San Joaquin kit fox and minimize effects to habitat so that they are insignificant.

Our concurrence with the determination that the proposed action is not likely to adversely affect San Joaquin kit fox is contingent on the measures outlined above being implemented by the BOR and Valley Water. If BOR and Valley Water fail to implement these measures, we will consider our concurrence invalid.

Avoidance and Minimization Measures for least Bell's vireo in San Benito County:

- Valley Water will limit dewatering activities to the month of November. It is possible dewatering could extend into the first week of December if unforeseen issues are encountered.

- In or immediately adjacent to areas of least Bell's vireo habitat, Valley Water will use local streets, highways, and the existing access roads for vehicle access to work areas. If off-road access is required, a Service-approved biologist will clearly demarcate the access route and avoid impacting least Bell's vireo habitat. In these cases, access routes will be limited a width of 15 feet or less. Valley Water will prohibit off-road travel and project personnel will adhere to marked paths.

- A Service-approved biologist will determine the need to monitor for listed species by assessing each site for potential habitat and species activity. When project activities have the potential to affect listed species a qualified biologist will be present on-site during all work activities in San Benito County to ensure implementation of avoidance and minimization measures. The biologist(s) will have the authority to stop work if there is threat of harm to listed species or if any measures are not being fulfilled, and will notify BOR and the Service within 1 day of any work stoppage.

- Prior to the start of construction activities, a Service-approved biologist will provide training to all construction personnel. At a minimum, training will include information on identifying least Bell's vireo, their ecology and habitat requirements, the boundaries within which the project must be accomplished and vehicle travel restricted, the avoidance and minimization measures to be followed, as well as proper procedures for staff if any least Bell's vireo are detected within the project area. Valley Water will also require training of new or additional personnel before they are allowed to access the project site. As a part of this training, Valley Water will distribute photographs of least Bell's vireo to all workers and contractors.

- During least Bell's vireo breeding season (mid-March to mid-September) and prior to the start of construction, a Service-approved biologist will conduct surveys for least Bell's

vireo at project sites within 300 feet of suitable least Bell's vireo habitat. Preconstruction/pre-activity surveys will be conducted no less than 7 days and no more than 30 days prior to the beginning of construction activities or any project activity likely to impact the least Bell's vireo following standard recommendations (Service 2011).

- At project sites within 300 feet of suitable least Bell's vireo habitat, Service-approved biologist will monitor for least Bell's vireo on the morning before the start of daily work during least Bell's vireo breeding season (mid-March to mid-September). If a least Bell's vireo or any animal that construction personnel believes may be a least Bell's vireo is encountered during project construction, the following protocol will be followed:
    - All work that could result in direct injury, disturbance, or harassment of the individual animal shall immediately cease.
    - The foreman and on-site biologist shall be immediately notified.
    - The on-site biologist shall immediately notify the Service via telephone or electronic mail when a least Bell's vireo is encountered that may be in harm's way.
    - Workers will allow the species to leave the work site on their own volition.

- Valley Water will prohibit pets at the project site.

- Valley Water will dispose of all litter and construction debris off-site in accordance with State and local regulations. All trash and debris within the work area would be placed in containers with secure lids before the end of each workday in order reduce the likelihood of predators being attracted to the site by discarded food wrappers and other rubbish that may be left on-site. If containers meeting these criteria are not available, all rubbish would be removed from the project site at the end of each workday.

- The introduction and spread of invasive animal and plant species will be avoided to the maximum extent practicable. To avoid the spread of aquatic invasive animals, Valley Water will use screens and geotextile bags during pipeline draining. The spread of invasive plants will be avoided by cleaning all equipment prior to entering project sites and sanitizing vehicles, equipment, clothing, and other materials to avoid the spread of Phytophthora.

- Valley Water will retain woody material (including live leaning trees, dead trees, tree trunks, large limbs, and stumps) unless it is threatening a structure or impedes reasonable access, in which case Valley Water will retain the material on site but relocated to an area where it poses less of a threat.

- Valley Water work activities will have noise levels that are less than 60 decibels near least Bell's vireo habitat. The project site is about 200 feet from riparian habitat, with a cattail thicket in-between that habitat and the project area. If a least Bell's vireo nest is

> detected at any time, a Service-approved biologist will establish a 500-foot buffer around the nest within which work will be suspended until vireos leave the area. A smaller buffer may be established if deemed protective by the Service-approved biologist. The biologist will monitor the nest when activities occur immediately adjacent to the buffer zone to determine the effects of project activities on nesting least Bell's vireos.

Least Bell's vireos are rare in northern San Benito County. The CNDDB contains only one confirmed breeding record in northern San Benito County from 1932. A second CNDDB record, where the observer suspected breeding, occurred in 1997 (CDFW 2021). Since 1997, least Bell's vireos have not bred in northern San Benito County and one least Bell's vireo was detected in 2001. Only one site within the project area of San Benito County, SCC 9, contains least Bell's vireo nesting habitat. This site contains dense willow woodland with well-defined vegetative layers that provides low to moderate quality nesting habitat for the species. However, the site is immediately adjacent to a road, which reduces the likelihood of nesting in that immediate area (BOR 2021).

After reviewing the information provided, we concur with your determination that the proposed action may affect, but is not likely to adversely affect the least Bell's vireo. Our concurrence is based on the following:

1. Due to this species' rare and sporadic occurrence in the project vicinity, the probability of its occurrence in the project area is low.

2. Valley Water will implement conservation measures as a part of the proposed project that will avoid take of least Bell's vireo and minimize effects to habitat so that they are insignificant.

Our concurrence with the determination that the proposed action is not likely to adversely affect least Bell's vireo is contingent on the measures outlined above being implemented by BOR and Valley Water. If the BOR and Valley Water fail to implement these measures, we will consider our concurrence invalid.

<u>Critical habitat for California red-legged frog in Santa Clara and San Benito Counties</u>

You have requested our concurrence with your determination that the proposed action may affect, but is not likely to adversely affect the critical habitat for the California red-legged frog. The Service designated critical habitat for the California red-legged frog on March 17, 2010 (75 Federal Register (FR) 12816). The final rule describes 48 separate units, encompassing approximately 1,636,609 acres, in 27 counties in California. The designation includes lands supporting those features necessary for the conservation of the California red-legged frog.

In accordance with section 3(5)(A)(i) of the Act and Federal regulations at 50 Code of Federal Regulations (CFR) 424.12, in determining which areas to designate as critical habitat, we identified the physical and biological features (PBFs) essential to the conservation of the species which may require special management considerations or protection. Because not all life history functions require all the PBFs, not all areas designated as critical habitat will contain all of the PBFs. Based on our current knowledge of the life history, biology, and ecology of the California red-legged frog, we determined the California red-legged frog's PBFs are:

- Aquatic breeding habitat, which consists of standing bodies of fresh water (with salinities less than 4.5 parts per thousand), including natural and manmade (stock) ponds, slow moving streams or pools within streams and other ephemeral or permanent water bodies that typically become inundated during winter rains and hold water for a minimum of 20 weeks in all but the driest of years;

- Aquatic non-breeding habitat, which consists of the freshwater habitats as described for aquatic breeding habitat but which may or may not hold water long enough for the species to complete the aquatic portion of its lifecycle but which provide for shelter, foraging, predator avoidance, and aquatic dispersal habitat of juvenile and adult California red-legged frogs;

- Upland habitat, which consists of upland areas adjacent to or surrounding breeding and non-breeding aquatic and riparian habitat up to a distance of one mile in most cases (i.e. depending on surrounding landscape and dispersal barriers), including various vegetation types such as grassland, woodland, forest, wetland, or riparian areas that provide shelter, forage, and predator avoidance for California red-legged frogs. Upland habitat should contain structural features such as boulders, rocks and organic debris (e.g. downed trees, logs), small mammal burrows, or moist leaf litter; and

- Dispersal habitat, which consists of accessible upland or riparian habitat within and between occupied or previously occupied sites that are located within 1 mile of each other, and that support movement between such sites. Dispersal habitat includes various natural habitats, and altered habitats such as agricultural fields that do not contain barriers (e.g. heavily traveled roads without bridges or culverts) to dispersal. Dispersal habitat does not include moderate- to high-density urban or industrial developments with large expanses of asphalt or concrete, nor does it include large lakes or reservoirs over 50 acres in size, or other areas that do not contain those features identified in PBFs 1, 2, or 3 as essential to the conservation of the species.

The proposed project activities on the Pacheco Conduit, vaults 2 and 12, are located within California red-legged frog critical habitat Unit STC-2 in Santa Clara County and all habitat PBFs for California red-legged frog are found in areas surrounding these vaults.

Water discharge could affect the aquatic resources of critical habitat through release of water causing erosion and sedimentation. However, BOR will implement conservation measures to avoid erosion and scour of banks that would cause sedimentation inputs to streams. Additionally, pipe dewatering and discharge to streams (Pacheco Creek) would occur in December, outside of the breeding season for California red-legged frog in Santa Clara County (Jennings et al. 1997). Pipe draining and discharge would result in affects that are temporary and of short duration. Valley Water could affect non-breeding dispersal habitat when accessing the Pacheco Conduit, vaults 2 and 12. Effects would be temporary over a short period and are unlikely to reach the level of adverse effects with the implementation conservation measures. Project activities do not include excavation, construction, or other project activities that would result in permanent impacts to California red-legged critical habitat.

We concur with your determination regarding this critical habitat because:

- Valley Water will implement conservation measures that will avoid erosion and scour of banks that would cause sedimentation in aquatic California red-legged frog habitat.

- Project activities in California red-legged upland and dispersal habitat do not include excavation, construction activities, or other permanent impacts to habitat.

- The temporary nature of the project would not produce any long-term, adverse effects to the PBFs of critical habitat and would be insignificant.

Our concurrence with the determination that the proposed project is not likely to adversely affect critical habitat for California red-legged frogs is contingent on the measures being implemented by BOR and Valley Water (applicant). If BOR and applicant fail to implement these measures, we will consider the concurrence invalid. If the proposed action changes in any manner or if new information reveals the presence of listed species in the project area, you should contact our office immediately and all activities should be suspended until the appropriate compliance with the Act is completed.

<u>California tiger salamander, Central California DPS, Critical Habitat in Santa Clara and San Benito Counties</u>

You have requested our concurrence with your determination that the proposed action may affect, but is not likely to adversely affect the critical habitat for the California Tiger Salamander Central DPS. On August 23, 2005, the Service published a critical habitat designation for the central population of the California tiger salamander (70 FR 49380, Service 2005). A total of 199,109 acres (as 31 units) were designated as critical habitat in 19 California counties. The designation includes lands supporting those features necessary for the conservation of the California tiger salamander.

In accordance with section 3(5)(A)(i) of the Act and Federal regulations at 50 Code of Federal Regulations (CFR) 424.12, in determining which areas to designate as critical habitat, we identified the PBFs essential to the conservation of the species which may require special management considerations or protection. Because not all life history functions require all the PBFs, not all areas designated, as critical habitat will contain all of the PBFs. Based on our current knowledge of the life history, biology, and ecology of the California tiger salamander, we determined the California tiger salamander's PBFs are:

- Breeding habitat consists of standing bodies of fresh water (including natural and manmade (*e.g.*, stock)) ponds, vernal pools, and other ephemeral or permanent water bodies which typically support inundation during winter rains and hold water for a minimum of 12 weeks in a year of average rainfall.

- Non-Breeding habitat consists of uplands adjacent to and accessible from breeding ponds that contain small mammal burrows or other underground habitat that California tiger salamanders depend upon for food, shelter, and protection from the elements and predation.

- Dispersal habitat consist of upland areas adjacent to essential aquatic habitats which are not isolated from other essential aquatic habitats by barriers that California tiger salamander cannot cross.

The SCC crosses critical habitat of the California tiger salamander. Designated critical habitat East Bay Unit 12 (San Felipe Unit) for the California tiger salamander is present along Highway 152 near San Felipe Lake and Casa de Fruta. Critical habitat in East Bay Unit 12, San Felipe Unit, of the Santa Clara and San Benito Counties, encompasses lands around San Felipe Lake. Critical Habitat Unit 12 includes all PBFs for California tiger salamander. This unit is comprised of 6,642 acres (2,688 hectares) of habitat and is essential to the conservation of the species because it maintains the current geographic and ecological distribution of the species within the Bay Area Geographic Region.

All California tiger salamander PBFs are present in or near the vicinity of the project area. Suitable breeding habitat (PBF 1) for California tiger salamanders is present within the project area. In addition to breeding habitat within the project area, there are breeding sites located to the north that are within dispersal distance of California tiger salamanders. However, this breeding habitat is unlikely to be suitable and occupied because it contains predatory fish and bullfrogs that prey on California tiger salamanders and their eggs. Virtually all undeveloped habitat in the project area is suitable non-breeding and dispersal upland habitat (PBF 2 and 3). However, the vast majority of the lands that make up the project area is predominantly agricultural lands used for cultivation, where burrows are unlikely to persist due to annual tilling. Cultivated lands also reduce California tiger salamander dispersal through these areas. California tiger salamander

dispersal is further impeded by Highway 152 and Pacheco Creek, limiting California tiger salamander dispersal from the breeding ponds to the north of the project area.

The timing of water discharge would result in insignificant effects to California tiger salamander breeding habitat (PBF 1) because the Valley Water will conduct dewatering activities during the wet season when seasonal rains have inundated wetlands. Valley Water will also implement conservation measures that avoid erosion, scouring of stream banks, and sedimentation from water discharge. The project does not include excavation or construction activities, that could alter critical habitat within San Benito County, Therefore, the applicant would avoid potential project effects to California tiger salamander upland habitat (PBF 2 and 3).

We concur with your determination regarding California tiger salamander critical habitat because:

- Breeding habitat within the project area is not likely to be occupied due presence of predatory fish and bullfrogs and Valley Water will implement conservation measures that will avoid erosion and scour of banks that would cause sedimentation into aquatic habitat.

- Project activities in California tiger salamander upland and dispersal habitat do not include excavation, construction activities, or other permanent impacts to habitat.

- The temporary nature of the project would not produce any long-term, adverse effects to the PBFs of critical habitat and would be insignificant.

Our concurrence with the determination that the proposed project is not likely to adversely affect critical habitat for California tiger salamander is contingent on the measures being implemented by BOR and applicant. If BOR and applicant fail to implement these measures, we will consider the concurrence invalid. If the proposed action changes in any manner or if new information reveals the presence of listed species in the project area, you should contact our office immediately and all activities should be suspended until the appropriate compliance with the Act is completed.

Consultation History

June 19, 2020 - BOR requested and received a species list from Service for the action area based on the project's 30 percent design.

December 11, 2020 - BOR requested and received an updated species list from Service for the action area based on the project's 60 percent design.

January 7, 2021 - BOR received a final project description from Valley Water that included additional vault locations on the Pacheco Conduit. BOR requested and received an updated

species list from the Service for the action area based on the project's final design and consideration only of the project activities in San Benito County.

January 19, 2021 - BOR requested direction from Service regarding which office would lead the consultation.

January 21, 2021 - The Service responded to BOR's inquiry, and indicated that the Ventura Fish and Wildlife Office (FWO) would further coordinate on the project with BOR.

February 12, 2021 - The Service and BOR discussed the project activities and the Service provided technical assistance.

March 9, 2021 - BOR submitted a biological assessment to the Ventura FWO and requested consultation on the project.

March 15, 2021- BOR submitted the SCVHP reporting form for the portions of the proposed project that are covered by the SCVHP (i.e., Santa Clara County portions) to Sacramento FWO and Ventura FWO.

March 15-16, 2021 - The Service provided via electronic mail to BOR, Valley Water, and Santa Clara Valley Habitat Agency comments on the SCVHP reporting form. The Service also stated that BOR should request informal consultation on California red-legged frog critical habitat.

March 16, 2021 - The Service received from Valley Water the revised SCVHP reporting form.

March 23, 2021 - The Service received from BOR the request for informal consultation on California red-legged frog critical habitat.

May 12, 2021 - BOR requested guidance from the Service on the change in project description related to the potential for dewatering portions of Coyote Creek and added project activities including inspection of the Santa Clara Tunnel, Pacheco Tunnel, and Pacheco Tank. A portion of the Pacheco Tunnel and the Pacheco Tank are in Merced County.

June 21, 2021 - BOR requested an extension related to the change in project description and project start date of fall of 2022.

August 11, 2021 - The Service received from Valley Water the revised SCVHP reporting form for the portions of the proposed project that are covered by the SCVHP (i.e., Santa Clara County portions).

August 20, 2021 - BOR submitted a biological assessment addendum along with updated project documents to the Ventura FWO.

September 27, 2021 - BOR informed the Service that dewater (dryback) of Coyote Creek would be avoided with the additional use of stored water in Coyote Reservoir in lieu of CVP water from the SCC to maintain Coyote Creek streamflow.

February 2, 2022 - The Service provided a draft biological opinion to BOR and Valley Water for their review.

February 11, 2022 - BOR returned the draft biological opinion with BOR's and Valley Water's comments to the Service.

February 15, 2022 - The Service emailed BOR suggesting the inclusion of a capture and relocation measure as a part of the project description or as a term and condition of the biological opinion. BOR's replied requesting that capture and relocation be included as a term as condition rather than a measure in the project description.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

BOR proposes to authorize Santa Clara Valley Water District's (Valley Water) inspection, maintenance, repair, and replacement activities of the Santa Clara Conduit (SCC), Santa Clara Tunnel (SCT), Pacheco Sectionalizing Vault (PSV), and Pacheco Conduit. With authorization from BOR, Valley Water would shut down, dewater, inspect, and rehabilitate the SCC, SCT, and PSV. They will also shut down and partially dewater (between vaults 2 and 12) the PAC in order to replace sectionalizing valves and repair acoustic optic fiber.

Both the SCC and PAC are a part of the San Felipe Division of BOR. The SCC and PAC form a continuous water conveyance system, which conveys raw water from the San Luis Reservoir to the Coyote Pumping Plant located in the City of Morgan Hill. Between these two locations the PAC is also used to convey water to the City of Hollister, and the SCC is also used to provide water to two groundwater recharge ponds (Main Avenue and San Pedro Ponds) owned and operated by Valley Water and located in the Morgan Hill unincorporated area.

The PAC consists of about seven miles of 120-inch pre-stressed concrete cylinder pipe (PCCP), which runs from San Luis Reservoir along Pacheco Pass Highway, and ends by connecting to the SCC near Casa De Fruta Parkway in the City of Hollister. The SCC consists of approximately 22 miles of 96-inch PCCP. The SCC runs southwest from Casa De Fruta Parkway to the northern edge of San Benito County. Once entering the northern portion of San Benito County, the SCC runs northwest, south of and around San Felipe Lake, for approximately 3.6 miles and then enters Santa Clara County. Once back in Santa Clara County, the SCC runs northwest on the valley floor between U.S. Highway 101 and the western edge of the Diablo Range, ending at the Coyote Pump Plant in the City of Morgan Hill.

The project will be completed in two phases and will involve two pipeline shutdowns. Phase 1 will involve shutting down both pipelines, dewatering the first half of SCC and a portion of PAC, and completing the inspection and rehabilitation (construction) work at 31 vault locations. During Phase 1, Valley Water would inspect SCC and PAC tunnels and an above ground storage tank at the Pacheco Pumping Plant. Phase 2 would involve the shutdown of the SCC, dewatering from the Sectionalizing Valve 1 (SV1) to the Coyote Pump Plant. Valley Water would conduct a portion of Phase 2 dewatering activities in San Benito County. All construction activities would occur outside of San Benito County during Phase 2. Valley Water expects Phase 1 to begin November 1, 2022, and work to be complete by January 31, 2023. Phase 2 is expected to begin in November 2023 and end in January 2024.

To perform the required work, Valley Water would dewater the pipelines into receiving waters and streams. In total, the proposed project will discharge approximately 86.4 million gallons of raw water (i.e., not chlorinated or treated) into the following receiving waters: Coyote Creek, Main Avenue Ponds, San Pedro Ponds, Tennant Creek, Corrallitos Creek, San Martin Creek, a roadside V-ditch, Center Creek, New Creek, Church Creek, Rucker Creek, Skillet Creek, Llagas Creek, Jones Creek, San Ysidro Creek, an agricultural ditch draining to Pajaro River, Millers Canal, Pacheco Creek,., Main Avenue Ponds, and San Pedro Ponds.

Once dewatering of the pipelines is complete, Valley Water would begin inspection and rehabilitation work. These activities include a full inspection and condition assessments of the dewatered pipelines and associated valves and control structures. Once identified, Valley Water would repair or replace distressed pipe sections and defective appurtenances, update electrical and control systems, and install or rehabilitate corrosion protection systems.

Valley Water would access pipeline vaults and other work areas using paved local roads, unpaved Valley Water access roads, and through open fields with no roads. If the access roads and terrain become unstable due to wet weather conditions, Valley Water would temporarily place composite mats on the access roads to provide a safe, continuous, solid surface for vehicles on-site. The mats would remain in place during project until project activities at that location are complete. At some locations, Valley Water would temporarily remove existing fences to permit access. In these instances, Valley Water would install interim gates or fencing, or both, to prevent unauthorized entry to the work area. Valley Water would remove the interim gates at the end of project activities and would not require excavation or ground disturbance for installation or removal. Temporary fencing consists of temporary pin flags or wood stakes with flagging, or both, used to demarcate the project boundaries, where existing property fencing is absent, or around suitable habitat that Valley Water will avoid. Flags or stakes will be installed by hand, with a biologist present, and all burrows will be avoided. Vaults that are offset from paved or access roads would require a 10-foot wide pathway to the vault for vehicles and equipment. Existing access roads are assumed to be 10-feet wide. A maximum 50-foot diameter work area, from center of vault, would be required for access and work around all vault sites.

Prior to the start of the maintenance activities, Valley Water staff may conduct minor site and road preparation work to gain access and repair vulnerable areas along the pipeline. After the pipeline is refilled and back in service, Valley Water and contracted staff would complete any site restoration and road repair work as needed. Restoration of minor damage to landscaping, property fixtures (i.e., fences) and roads may be required.

The proposed project occurs within (Santa Clara County portions) and outside (San Benito County and Merced County portions) of the Santa Clara Valley Habitat Plan (SCVHP) permit area. The portions of the proposed project that are within the SCVHP permit area (i.e., Santa Clara County portions) are covered activities in the SCVHP and their effects have been analyzed in the intra-Service section 7 consultation for the biological opinion for the SCVHP (Service 2013). We will incorporate sections of that biological opinion by reference, as appropriate.

Inside the SCVHP Permit Area (Santa Clara County Portions)

During Phase 1, Valley Water would conduct project activities at 15 vaults locations on the SCC and 4 vaults along the PAC within the SCVHP Permit Area. Phase 2 will involve shutting down SCC, dewatering the second half of SCC, and inspecting and rehabilitating, when necessary, 35 vault locations all of which are in the SCVHP Permit Area. Phase 2 of the proposed project also includes minor excavation in Santa Clara County in two upland areas to install rectifiers and connect them to adjacent utilities. Valley water will use a boring rig to create a hole that is 1-foot in diameter and 300-feet deep at each location. Installation will also require Valley water to create a 2-foot wide by 2.5-feet deep ditch between at each site ranging between 38 and 330 feet long, depending on the site. In addition to the excavation, Valley Water will use two upland staging areas to create centralized locations for temporary staging of proposed project equipment and materials.

SCVHP Conservation Measures

The Santa Clara County portions of the proposed project are within the SCVHP permit area and are a covered activities under the SCVHP and subject to the conservation strategy and the conditions on covered activities described in the SCVHP, which we incorporate by reference (ICF International 2012, Chapters 5 and 6; Service 2013, pp. 11-12). These conditions outline the SCVHP's measures to avoid and minimize take of covered species including the species that are the subject of this consultation. The SCVHP requires specific avoidance and minimization measures for covered activities that have the potential to affect SCVHP covered species, sensitive habitats, natural communities, and jurisdictional wetlands and other waters in Santa Clara County. Therefore, Valley Water will implement all applicable measures, including mitigation measures, from the SCVHP for the affected species within the permit area.

Outside the SCVHP Permit Area (San Benito County and Merced County Portions)

Project activities within Merced County

Valley Water would conduct the Phase 1 shutdown and dewatering of the PAC and SCC within Merced County. These activities include inspection of Pacheco Tunnel, and Pacheco Tank. To facilitate this inspection, Valley Water would discharge raw water from the Pacheco Tunnel back to the Pacheco Tank and then to the San Luis Reservoir where it originated. Valley Water would not require additional dewatering to conduct project activities in Merced County. Valley Water would inspect the dewatered tunnels over a one-week period. Valley Water would not conduct maintenance or repair work as part of the project activities. Valley Water will access project facilities by existing roads. Crews would stage on hardened surfaces at the Pacheco Pumping Plant and the Pacheco Sectionalizing Valve. Project activities would not include ground disturbance within Merced County.

Project activities within San Benito County

During Phase 1 of the project, Valley Water would use four vaults to assist in dewatering the portion of the SCC that would be inspected within San Benito County. In addition to the four vaults, one vault in Santa Clara County would also discharge into San Benito County. As a result of dewatering activities during Phase 1, Valley Water would release a total of 27,894,493 gallons of water into four jurisdictional waters, Pacheco Creek, Pajaro River, Millers Canal, or San Ysidro Creek. Valley Water would discharge water from these vaults over a period of several hours to a few days.

Once started, Valley Water would continue dewatering activities through precipitation events and occur at night. Valley Water will ensure that all project work will have biomonitoring, especially during nighttime work or any work through precipitation events to help avoid and minimize impacts to listed species. During Phase 2, Valley Water would use one vault within San Benito County to aid in the dewatering the remaining portion of the SCC. Phase 2 dewatering would result in 15,218,232 gallons of water discharged over a period of 4.7 days into Pacheco Creek. Valley Water would control discharge rates and implement measures (e.g., visqueen, spillways, dissipater bags, and flow-direction fish screens) to direct this discharge and avoid scour at each of the dewatering locations. Valley Water will implement measures prior to and during the discharge to further reduce the risk of localized flooding. Service-approved biologists will conduct site visits to check on each creek and its integrity prior to dewatering. During the discharge itself, the contractor, pipe mechanics, construction inspectors, and biologists would be on-site and available to shut down dewatering at a site if a creek appears to be overloaded. Valley Water contractors would increase the discharge rate slowly such that the buildup of water in any creeks, rivers, or canals is gradual and scouring of the channel bed and ground surfaces does not occur.

After dewatering, Valley Water would conduct work at 10 of the 13 vaults in San Benito County. Valley Water would conduct structural inspections to identify distressed pipe sections and defective appurtenances, and then implement repair, rehabilitation and replacement for old and defective appurtenances (e.g., valves, flowmeters). Valley Water would also update electrical and control systems, install or rehabilitate corrosion protection systems as well as any monitoring and tracking systems. To complete this work, Valley Water would use truck and truck mounted cranes to transport replacement material and set them into place. Valley Water would clear vegetation around two of the vaults by weed whacking. Valley Water would clear crops to conduct work at two other vaults in order to perform the work at these locations.

Conservation Measures

Valley Water proposes to avoid and minimize affects to California tiger salamander and California red-legged frog by further implementing the following conservation measures:

1. Valley Water will limit dewatering to the month of November (i.e., discharging of raw water from the pipeline into streams would not be occurring in December and January) to reflect rainy season input timing for receiving water bodies to avoid and minimize impacts to listed aquatic species. It is possible dewatering could extend into the first week of December if unforeseen issues were encountered.
2. Vehicles will access the work areas via local streets, highways, and the existing access roads whenever possible. At two vault locations, access will occur through 50 to 200 feet of tilled agricultural field and a Service-approved biologist will clearly demarcate access routes. Valley Water will limit routes to a width of 15 feet or less. Personnel would be required to adhere to marked paths. Valley Water will not allow any off-road travel outside of the demarcate areas. All project traffic will avoid burrows potentially occupied by California red-legged frog or California tiger salamander.
3. Valley Water will limit traffic speeds on unpaved roadways to 10 miles per hour and lower to address night-time work for dewatering, or dewatering during precipitation events.
4. A qualified botanist will survey all unsurfaced areas used for access and staging prior establishment. The botanist will determine appropriate no disturbance buffers, which will be temporarily marked for avoidance to avoid serpentine areas and special status plants. Upon project completion, Valley Water will remove and properly dispose of all temporary markers.
5. Prior to the start of construction, a Service-approved biologist will conduct surveys for California red-legged frog and California tiger salamander within 48 hours of the start of work activities. If any project personnel observe any life stage of these animals, the Service-approved biologist will immediately be notified and would follow the protocol outlined in measure 9 below.

6. A Service-approved biologist will determine the need to monitor for listed species by assessing each site for potential habitat and species activity. When project activities have the potential to affect listed species, a qualified biologist will be present on-site during all work activities in San Benito County to ensure implementation of avoidance and minimization measures. Valley Water will provide qualifications of the biologist(s) to the Service for approval at least 14 days prior to the start of project activities. The biologist(s) will have the authority to stop work if there is threat of harm to listed species or if any measures are not being fulfilled, and will notify the BOR and the Service within 1 day of any work stoppage.
7. A Service-approved biologist will survey for California red-legged frog and California tiger salamander in the receiving water body 1 week prior to water discharge. If a California red-legged frog or California tiger salamander or their larvae are not found within 500 feet upstream or downstream of the release point, absence would be re-verified within 24 hours of the commencement of release. Release can commence if no adults, eggs, or larvae are found 500 feet upstream or downstream of the release point during the second survey. If adults, eggs, or larvae are found within 100 feet downstream of a release point, the discharge point would not be utilized. If found within 200–500 feet from the release point, velocity reduction, accomplished by either slowing release, decreasing release volume, and/or applying dissipation, will be implemented to minimize effects to these species.
8. If any project personnel observe any life stage of the California red-legged frog and California tiger salamander, the Service-approved biologist will immediately be notified and will follow the protocol outlined in measure 9.
9. The Service-approved biologist would survey for California tiger salamander and California red-legged frog on the morning before the start of daily work. If California tiger salamander, California red-legged frog, or any animal that construction personnel believes may be one of these species, is encountered during project construction, the following protocol will be followed:
    a. Valley Water will immediately cease all work that could result in direct injury, disturbance, or harassment of the animal.
    b. Project personnel will immediately notify the foreman and on-site biologist.
    c. The species will be allowed to leave the work site on their own volition.
10. Prior to the start of construction activities, a Service-approved biologist would conduct atraining session for all construction personnel. At a minimum, training will include information on identifying California red-legged frog and California tiger salamander, their ecology and habitat requirements, the boundaries within which the project must be accomplished and vehicle travel restricted, the avoidance and minimization measures to be followed, as well as proper procedures for staff if any individuals are detected within the project area. Training will be required of new or additional personnel before they are allowed to access the project site. Valley Water will distribute photographs of California red-legged frog and California tiger salamander to all workers and contractors as a part of this training.

11. If a rain event of 0.5 inch or greater in a 24-hour period occurs, Valley Water will stop all work, except for dewatering. Valley Water will resume work only after precipitation ceases, a drying-out period of 48 hours is observed, and the Service-approved biologist inspects all work areas to verify absence of California red-legged frog and California tiger salamander.
12. The Service-approved biologist(s) and all project personnel will visually inspect for California red-legged frogs and California tiger salamanders under and around vehiclesand equipment prior to use.
13. An individual trained in monitoring water levels will observe flows in receiving waters. If it appears that discharges are approaching channel capacity, Valley Water will reduce discharge rates. If erosion is evident, Valley Water will reduce flow rates. If erosion continues to occur, Valley Water will stop discharges until the install appropriate erosion control measures. Valley Water will conduct monitoring prior to the start of discharge and regularly during the discharge. Monitoring frequency will depend on the nature of the discharge and the erosion in the area. Valley Water will conduct water quality monitoring and adhere to the water quality parameter (DO, turbidity, temperature) thresholds required by Valley Water's National Pollutant Discharge Elimination System Permit and Pipeline Maintenance Program environmental impact report (BOR 2021).
14. Valley Water will ensure that the limits of all work areas including staging, construction, parking, access routes, andany areas of avoidance are flagged prior to disturbance and all activity confined to within the marked areas. Workers will install flags or stakes by hand, with a biologist present, avoiding all burrows. Demarcations will be spaced out appropriately and would be placed ≥ 5 feet.
15. Valley Water will avoid nighttime activities except for dewatering activities. All night lighting will be shielded, downward directed, and illuminate only the work area.
16. Valley Water will avoid the fueling, repair, cleaning, maintenance, or vehicle washing at jobsites or within 65 feet of a wetland or riparian area.
17. Valley Water will store all chemicals in secondary containment with no less than 110 percent capacity. Valley Water will implement proper storage and security to ensure chemicals are not spilled or vandalized during non-working hours.
18. Valley Water will not allow firearms on-site, except for Federal, State, local law enforcement,or security guards.
19. Valley Water will not allow pets at the project site.
20. During pipeline draining, Valley Water will place wedge wire screens (< 5 millimeters) over the discharge openings of gravity drain gates, and on the suction and discharge piping of any submersible pumps used for pipeline discharge to minimize discharge of non-native species and to prevent entry or entrapment of California red-legged frog or California tiger salamander.

21. Valley Water will restrict vehicle traffic to established roads and designated areas and utilize previously disturbed areas whenever possible. Valley Water will include vehicle use area during preconstruction surveys.
22. Valley Water will dispose of all litter and construction debris off-site in accordance with State and local regulations.
23. Valley Water will place all trash and debris within the work area in containers with secure lids before the end of each workday in order reduce the likelihood of predators being attracted to the site by discarded food wrappers and other rubbish that may be left on-site. If containers meeting these criteria are not available, Valley Water will remove all rubbish from the project site at the end of each workday.
24. Valley Water will avoid the introduction and/or spread of invasive animal and plant species. To avoid the spread of aquatic invasive animals, Valley Water will use screens and geotextile bags during pipeline draining. The spread of invasive plants will be avoided by cleaning all equipment prior to entering project sites and sanitizing vehicles, equipment, clothing, and other materials to avoid the spread of Phytophthora.
25. Valley Water will not allow the use of plastic monofilament netting (erosion control matting), rolled erosion control productsor similar material because California red-legged frog, California tiger salamander, and other species may become entangled or trapped in it.
26. Valley Water will use tightly woven fiber netting, such as coconut fiber or similar material forerosion control or other purposes at the project to ensure that the California red-legged frog and California tiger salamander do not get trapped. Valley Water will communicate this limitation to the contractor through use of special provisions included in the bid solicitation package.
27. Valley Water will securely cap or thoroughly inspect all construction pipes, culverts, or similar structures that are stored at a construction site for one or more overnight periods to avoid the entrapping any California tiger salamanders or California red-legged frogs. The on-site biologist or the construction foreman or manager will conduct the inspection for listed species before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a California tiger salamander or California red-legged frog is discovered inside a pipe by the on-site biologist or anyone else, the protocol outlined in measure 9 would be followed.
28. Valley Water will not attempt the relocation of amphibian egg masses. If project personnel observe amphibian egg masses, a Service-approved biologist will determine if the egg masses are California red-legged frog or California tiger salamander. If the egg masses are from either of these species, Valley Water will suspend work at these locations until hatching is completed and larvae are at least 2 weeks into a fully mobile condition.
29. Valley Water will retain woody material (including live leaning trees, dead trees, tree trunks, large limbs, and stumps) unless it is threatening a structure or impedes

reasonable access, in which case the material will be retained on site but relocated to an area where it posesless of a threat.

30. To avoid transferring disease or pathogens between aquatic habitats during surveys ofCalifornia red-legged frog or California tiger salamander, the Service-approved biologist will follow the Declining Amphibian Populations Task Force (DAPTF) Fieldwork Code of Practice (DAPTF 1998, The Declining Amphibian Task Force Fieldwork Code of Practice (fws.gov)). The biologist may substitute a bleach solution (0.5 to 1.0 cup of bleach to 1.0 gallon of water) for the ethanol solution. All traces of the disinfectant will be removed before entering the next aquatic habitat.
31. Valley Water will submit a final report to BOR and the Service which will include documentation of compliance with the conservation measures, a description of all project activities conducted and areas affected by the project, and all encounters with listed species including date, location, time, activity, and nature of the take (if applicable).

In addition to these conservation measures, the Service's terms and conditions include the capture and relocation of California red-legged frogs and California tiger salamanders (see page 50 below). While not a part of the proposed action, the effects of this term and condition will be included as a part of our effects analysis.

ANALYTICAL FRAMEWORK FOR THE JEOPARDY AND ADVERSE MODIFICATION DETERMINATIONS

Jeopardy Determination

Section 7(a)(2) of the Act requires that Federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species. "Jeopardize the continued existence of" means "to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species" (50 CFR 402.02).

The jeopardy analysis in this biological opinion relies on four components: (1) the Status of the Species, which describes the current rangewide condition of the California red-legged frog and the California tiger salamander (Central California Coast distinct population segment), the factors responsible for that condition, and the survival and recovery needs for each species; (2) the Environmental Baseline, which analyzes the condition of the California red-legged frog and the California tiger salamander (Central California Coast distinct population segment)in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the California red-legged frog and the California tiger salamander (Central California Coast distinct population segment); (3) the Effects of the Action, which

determines all consequences to the California red-legged frog and the California tiger salamander (Central California Coast distinct population segment) caused by the proposed action that are reasonably certain to occur in the action area; and (4) the Cumulative Effects, which evaluates the effects of future, non-Federal activities, that are reasonably certain to occur in the action area, on the California red-legged frog and the California tiger salamander (Central California Coast distinct population segment).

In accordance with policy and regulation, the jeopardy determination is made by evaluating the effects of the proposed Federal action in the context of the current status of the California red-legged frog and the California tiger salamander (Central California Coast distinct population segment), taking into account any cumulative effects, to determine if implementation of the proposed action is likely to reduce appreciably the likelihood of both the survival and recovery of the California red-legged frog and the California tiger salamander (Central California Coast distinct population segment) in the wild by reducing the reproduction, numbers, and distribution of that species.

STATUS OF THE SPECIES AND ITS CRITICAL HABITAT

California red-legged frog

Legal Status

The California red-legged frog was federally listed as threatened on May 23, 1996 (61 Federal Register (FR) 25813). Revised critical habitat for the California red-legged frog was designated on March 17, 2010 (75 FR 12816, Service 2010). The Service issued a recovery plan for the species on May 28, 2002 (Service 2002).

Natural History

The California red-legged frog uses a variety of habitat types, including various aquatic systems, riparian, and upland habitats. They have been found at elevations ranging from sea level to approximately 5,000 feet. California red-legged frogs use the environment in a variety of ways, and in many cases, they may complete their entire life cycle in a particular area without using other components (i.e., a pond is suitable for each life stage and use of upland habitat or a riparian corridor is not necessary). Populations appear to persist where a mosaic of habitat elements exists, embedded within a matrix of dispersal habitat. Adults are often associated with dense, shrubby riparian or emergent vegetation and areas with deep (greater than 1.6 feet) still or slow-moving water; the largest summer densities of California red-legged frogs are associated with deep-water pools with dense stands of overhanging willows (*Salix* spp.) and an intermixed fringe of cattails (*Typha latifolia*) (Hayes and Jennings 1988, p. 147). Hayes and Tennant (1985, p. 604) found juveniles to seek prey diurnally and nocturnally, whereas adults were largely nocturnal.

California red-legged frogs breed in aquatic habitats; larvae, juveniles, and adult frogs have been collected from streams, creeks, ponds, marshes, deep pools and backwaters within streams and creeks, dune ponds, lagoons, and estuaries. They frequently breed in artificial impoundments such as stock ponds, given the proper management of hydro-period, pond structure, vegetative cover, and control of exotic predators. While frogs successfully breed in streams and riparian systems, high spring flows and cold temperatures in streams often make these sites risky egg and tadpole environments. An important factor influencing the suitability of aquatic breeding sites is the general lack of introduced aquatic predators. Accessibility to sheltering habitat is essential for the survival of California red-legged frogs within a watershed and can be a factor limiting population numbers and distribution.

During periods of wet weather, starting with the first rains of fall, some individual California red-legged frogs may make long-distance overland excursions through upland habitats to reach breeding sites. In Santa Cruz County, Bulger et al. (2003, p. 90) found marked California red-legged frogs moving up to 1.7 miles through upland habitats, via point-to-point, straight-line migrations without regard to topography, rather than following riparian corridors. Most of these overland movements occurred at night and took up to 2 months. Similarly, in San Luis Obispo County, Rathbun and Schneider (2001, p. 1302) documented the movement of a male California red-legged frog between two ponds that were 1.78 miles apart in less than 32 days; however, most California red-legged frogs in the Bulger et al. (2003, p. 93) study were non-migrating frogs and always remained within 426 feet of their aquatic site of residence (half of the frogs always stayed within 82 feet of water). Rathbun et al. (1993, p. 15) radio-tracked three California red-legged frogs near the coast in San Luis Obispo County at various times between July and January; these frogs also stayed close to water and never strayed more than 85 feet into upland vegetation. Scott (2002, p. 2) radio-tracked nine California red-legged frogs in East Las Virgenes Creek in Ventura County from January to June 2001, which remained relatively sedentary as well; the longest within-channel movement was 280 feet and the farthest movement away from the stream was 30 feet.

After breeding, California red-legged frogs often disperse from their breeding habitat to forage and seek suitable dry-season habitat. Cover within dry-season aquatic habitat could include boulders, downed trees, and logs; agricultural features such as drains, watering troughs, spring boxes, abandoned sheds, or hay-ricks, and industrial debris. California red-legged frogs use small mammal burrows and moist leaf litter (Rathbun et al. 1993, p. 15; Jennings and Hayes 1994, p. 64); incised stream channels with portions narrower and deeper than 18 inches may also provide habitat (61 FR 25814). This type of dispersal and habitat use, however, is not observed in all California red-legged frogs and is most likely dependent on the year-to-year variations in climate and habitat suitability and varying requisites per life stage.

Although the presence of California red-legged frogs is correlated with still water deeper than approximately 1.6 feet, riparian shrubbery, and emergent vegetation (Jennings and Hayes 1994, p. 64). California red-legged frogs appear to be absent from numerous locations in its historical

range where these elements are well represented. The cause of local extirpations does not appear to be restricted solely to loss of aquatic habitat. The most likely causes of local extirpation are thought to be changes in faunal composition of aquatic ecosystems (i.e., the introduction of non-native predators and competitors) and landscape-scale disturbances that disrupt California red-legged frog population processes, such as dispersal and colonization. The introduction of contaminants or changes in water temperature may also play a role in local extirpations. These changes may also promote the spread of predators, competitors, parasites, and diseases.

Rangewide Status

The historical range of the California red-legged frog extended coastally from southern Mendocino County and inland from the vicinity of Redding, California, southward to northwestern Baja California, Mexico (Storer 1925, p. 235, Jennings and Hayes 1985, p. 95, Shaffer et al. 2004, p. 2673). The California red-legged frog has sustained a 70 percent reduction in its geographic range because of several factors acting singly or in combination (Davidson et al. 2001, p. 465).

Over-harvesting, habitat loss, non-native species introduction, and urban encroachment are the primary factors that have negatively affected the California red-legged frog throughout its range (Jennings and Hayes 1985, pp. 99-100, Hayes and Jennings 1988, p. 152). Habitat loss and degradation, combined with over-exploitation and introduction of exotic predators, were important factors in the decline of the California red-legged frog in the early to mid-1900s. Continuing threats to the California red-legged frog include direct habitat loss due to stream alteration and loss of aquatic habitat, indirect effects of expanding urbanization, competition or predation from non-native species including the bullfrog, catfish (*Ictalurus* spp.), bass (*Micropterus* spp.), mosquito fish (*Gambusia affinis*), red swamp crayfish (*Procambarus clarkii*), and signal crayfish (*Pacifastacus leniusculus*). Chytrid fungus (*Batrachochytrium dendrobatidis*) is a waterborne fungus that can decimate amphibian populations, and is considered a threat to California red-legged frog populations.

Recovery

The 2002 final recovery plan for the California red-legged frog (Service 2002) states that the goal of recovery efforts is to reduce threats and improve the population status of the California red-legged frog sufficiently to warrant delisting. The recovery plan describes a strategy for delisting, which includes: (1) protecting known populations and reestablishing historical populations; (2) protecting suitable habitat, corridors, and core areas; (3) developing and implementing management plans for preserved habitat, occupied watersheds, and core areas; (4) developing land use guidelines; (5) gathering biological and ecological data necessary for conservation of the species; (6) monitoring existing populations and conducting surveys for new populations; and (7) establishing an outreach program. The California red-legged frog will be considered for delisting when:

1. Suitable habitats within all core areas are protected and/or managed for California red-legged frogs in perpetuity, and the ecological integrity of these areas is not threatened by adverse anthropogenic habitat modification (including indirect effects of upstream or downstream land uses).

2. Existing populations throughout the range are stable (i.e., reproductive rates allow for long-term viability without human intervention). Population status will be documented through establishment and implementation of a scientifically acceptable population monitoring program for at least a 15-year period, which is approximately 4 to 5 generations of the California red-legged frog. This 15-year period should coincide with an average precipitation cycle.

3. Populations are geographically distributed in a manner that allows for the continued existence of viable metapopulations despite fluctuations in the status of individual populations (i.e., when populations are stable or increasing at each core area).

4. The species is successfully reestablished in portions of its historical range such that at least one reestablished population is stable or increasing at each core area where California red-legged frog are currently absent.

5. The amount of additional habitat needed for population connectivity, recolonization, and dispersal has been determined, protected, and managed for California red-legged frogs.

The recovery plan identifies eight recovery units based on the assumption that various regional areas of the species' range are essential to its survival and recovery. The recovery status of the California red-legged frog is considered within the smaller scale of recovery units as opposed to the overall range. These recovery units correspond to major watershed boundaries as defined by U.S. Geological Survey hydrologic units and the limits of the range of the California red-legged frog. The goal of the recovery plan is to protect the long-term viability of all extant populations within each recovery unit.

Within each recovery unit, core areas have been delineated and represent contiguous areas of moderate to high California red-legged frog densities that are relatively free of exotic species such as bullfrogs. The goal of designating core areas is to protect metapopulations that combined with suitable dispersal habitat, will support long-term viability within existing populations. This management strategy allows for the recolonization of habitat within and adjacent to core areas that are naturally subjected to periodic localized extinctions, thus assuring the long-term survival and recovery of the California red-legged frog.

California tiger salamander

Legal Status

The Service recognizes three distinct population segments (DPS) of the California tiger salamander: one in Sonoma County; one in northern Santa Barbara County; and one in central California, under consideration in this biological opinion. On September 21, 2000, the Service listed the Santa Barbara County DPS of the California tiger salamander as endangered (65 FR 57241). On March 19, 2003, the Service listed the Sonoma County DPS as endangered (68 FR 13497). On August 4, 2004, the Service published a final rule listing the California tiger salamander as threatened rangewide, including the previously identified Sonoma and Santa Barbara distinct population segments (69 FR 47212). On August 19, 2005, U.S. District Judge William Alsup vacated the Service's downlisting of the Sonoma and Santa Barbara populations from endangered to threatened. Thus, the Sonoma and Santa Barbara populations are listed as endangered, and the Central California population is listed as threatened.

Life History

The California tiger salamander is a large and stocky terrestrial salamander with small eyes and a broad, rounded snout. Adults may reach a total length of 8.2 inches, with males generally averaging about 8 inches in total length, and females averaging about 6.8 inches in total length. For both sexes, the average snout-to-vent length is approximately 3.6 inches (65 FR 57241). The small eyes have black irises and protrude from the head. Coloration consists of white or pale yellow spots or bars on a black background on the back and sides. The belly varies from almost uniform white or pale yellow to a variegated pattern of white or pale yellow and black. Males can be distinguished from females, especially during the breeding season, by their swollen cloacae (a common chamber into which the intestinal, urinary, and reproductive canals discharge), larger tails, and larger overall size (Trenham 1998, p. 74).

California tiger salamanders spend the majority of their lives in upland habitats and cannot persist without them. The upland component of California tiger salamander habitat typically consists of grassland savannah, but also includes scrub or chaparral habitats (Shaffer et al. 1993, 50 CFR 47216). Juvenile and adult California tiger salamanders spend the dry summer and fall months of the year in the burrows of small mammals, such as California ground squirrels (*Otospermophilus beecheyi*) and Botta's pocket gopher (*Thomomys bottae*) (Storer 1925, p. 70, Trenham 1998, p. 46).

Burrow habitat created by ground squirrels and utilized by California tiger salamanders suggests a commensal relationship between the two species (Loredo et al. 1996, p. 284). Movement of California tiger salamanders within and among burrow systems continues for at least several months after juveniles and adults leave the ponds (Trenham 2001, p. 345). California tiger salamanders cannot dig their own burrows, and as a result, their presence is associated with

burrowing mammals. Active burrowing rodent populations likely sustain California tiger salamanders because inactive burrow systems become progressively unsuitable over time (69 FR 47212, p. 32). Loredo et al. (1996, p. 284) found that California ground squirrel burrow systems collapsed within 18 months following abandonment by, or loss of, the mammals.

Adults enter breeding ponds during fall and winter rains, typically from October through February (Trenham et al. 2000, p. 369). Males migrate to the breeding ponds before females (Loredo and Van Vuren 1996, p. 895). Males usually remain in the ponds for an average of about 6 to 8 weeks, while females stay for approximately 1 to 2 weeks. In dry years, both sexes may stay for shorter periods (Loredo and Van Vuren 1996, pp. 897-899).

Females attach their eggs singly or, in rare circumstances, in groups of two to four, to twigs, grass stems, vegetation, or debris in the water (Storer 1925, p. 66, Twitty 1941, pp. 1-4). In ponds with little or no vegetation, females may attach eggs to objects, such as rocks and boards on the bottom. In drought years, the seasonal pools may not form and the adults may not breed (Barry and Shaffer 1994, pp. 159-164). The eggs hatch in 10 to 14 days with newly hatched salamanders (larvae) ranging in size from 0.5 to 0.6 inch in total length (65 FR 57241). The larvae are aquatic. Each is yellowish gray in color and has a broad, plump head; large, feathery external gills; and broad dorsal fins that extend well onto its back. The larvae feed on zooplankton, small crustaceans, and aquatic insects for about 6 weeks after hatching, after which they switch to larger prey (Anderson 1968, pp. 273-284). Larger larvae have been known to consume smaller tadpoles of tree frogs (*Pseudacris* spp.) and California red-legged frogs (*Rana draytonii*). California tiger salamander larvae are among the top aquatic predators in seasonal pool ecosystems.

The larval stage of the California tiger salamander usually lasts 3 to 6 months, because most seasonal ponds and pools dry up during the summer (Petranka 1998, p. 48). Amphibian larvae must grow to a critical minimum body size before they can metamorphose to the terrestrial stage (Wilbur and Collins 1973, pp. 1305-1314). Larvae collected near Stockton in the Central Valley during April varied from 1.9 to 2.3 inches in length (Storer 1925, p. 85). Feaver (1971, p. 51) found that larvae metamorphosed and left the breeding pools 60 to 74 days after the eggs had been laid, with larvae developing faster in smaller, more rapidly drying pools. The longer the inundation period, the larger the larvae and metamorphosed juveniles are able to grow, and the more likely they are to survive and reproduce (Semlitsch et al. 1988, p. 189). The larvae perish if a site dries before they complete metamorphosis. Pechmann et al. (2001) found a strong positive correlation between inundation period and total number of metamorphosing juvenile amphibians, including tiger salamanders (50 CFR 47215).

Metamorphosed juveniles leave breeding sites to move into upland habitat in the late spring or early summer. Both adults and juveniles may emerge from their upland retreats to feed during nights of high relative humidity (Shaffer et al. 1993, p. 5) before settling in their selected upland sites for the dry, hot summer months. While most California tiger salamanders rely on rodent

burrows for shelter, some individuals may utilize soil crevices as temporary shelter during upland migrations (Loredo et al. 1996, p. 284). Mortality of juveniles during their first summer exceeds 50 percent (Trenham 1998, p. 18). Emergence from upland habitat in hot, dry weather occasionally results in mass mortality of juveniles (Holland et al. 1990, p. 219).

Lifetime reproductive success for California tiger salamanders is typically low. Less than 50 percent breed more than once (Trenham et al. 2000, p. 365). In part, this is due to the extended length of time it takes for California tiger salamanders to reach sexual maturity; most do not breed until 4 or 5 years of age. Combined with low survivorship of metamorphs (in some populations, less than 5 percent of marked juveniles survive to become breeding adults (Trenham 1998, p. iv)), low reproductive success limits California tiger salamander populations. Because of this low recruitment, isolated subpopulations can decline greatly from unusual, randomly occurring natural events as well as from human-caused factors that reduce breeding success and individual survival. Based on metapopulation theory (Hanski and Gilpin 1991), factors that repeatedly lower breeding success in isolated ponds that are too far from other ponds for dispersing individuals to replenish the population further threaten the survival of a local population.

Rangewide Status

The Central California tiger salamander is endemic to the grassland community found in California's Central Valley, the surrounding foothills, and coastal valleys (Fisher and Shaffer 1996, p. 1390). The distribution of breeding locations of this species and the other two distinct population segments does not naturally overlap with that of any other species of tiger salamander (Petranka 1998, p. 47; Stebbins 2003, p. 469). California tiger salamanders occur in upland habitats at various distances from aquatic breeding habitats. During a mark and recapture study in the Upper Carmel River Valley in Monterey County, Trenham et al. (2000, p. 3526) observed California tiger salamanders dispersing up to 2,200 feet between breeding ponds between years. In research at Olcott Lake in Solano County, Trenham and Shaffer (2005, p. 1160) captured California tiger salamanders in traps installed 1,312 feet from the breeding pond. In a trapping study in Contra Costa County, most California tiger salamanders were trapped at least 2,600 feet from the nearest breeding pond and some were captured as far away as 7,200 feet (Orloff 2011, p. 266).

Historically, natural ephemeral vernal pools were the primary breeding habitats for California tiger salamanders (Trenham 2001, p. 3). However, with the conversion and loss of many vernal pools through farmland conversion and urban and suburban development, ephemeral and permanent ponds that have been created for livestock watering are now frequently used by the species (Robins and Vollmar 2002, p. 406).

The Central California tiger salamander is threatened primarily by the destruction, degradation, and fragmentation of upland and aquatic habitats, primarily resulting from the conversion of

these habitats by urban, commercial, and intensive agricultural activities. Additional threats to the species include hybridization with introduced nonnative barred tiger salamanders (*A. tigrinum mavortium*), destructive rodent-control techniques (e.g., deep-ripping of burrow areas, use of fumigants), reduced survival due to the presence of mosquitofish (*Gambusia affinis*) (Leyse and Lawler 2000, p. 76) and other introduced predators, and mortality on roads due to vehicles. Disease, particularly chytridiomycosis and ranaviruses, and the spread of disease by nonnative amphibians are discussed in the listing rule as additional threats to the species.

We do not have data regarding the absolute number of Central California tiger salamanders due to the fact that they spend most of their lives underground. Virtually nothing is known concerning the historical abundance of the species. At one study site in Monterey County, Trenham et al. (2000, p. 369) found the number of breeding adults visiting a pond varied from 57 to 244 individuals. A Contra Costa County breeding site, approximately 124 miles north of the Trenham et al. (2000) study site in Monterey County, showed a similar pattern of variation, suggesting that such fluctuations are typical (Loredo and Van Vuren 1996, p. 896). At the local landscape level, nearby breeding ponds can vary by at least an order of magnitude in the number of individuals visiting a pond, and these differences appear to be stable across years (Trenham et al. 2001).

Recovery

The strategy of the recovery plan for the Central California distinct population segment of the California tiger salamander (Service 2017, p. iv) focuses on alleviating the threat of habitat loss and fragmentation in order to increase population resiliency (ensure each population is sufficiently large to withstand stochastic events), redundancy (ensure a sufficient number of populations to provide a margin of safety for the species to withstand catastrophic events), and representation (conserve the breadth of the genetic makeup of the species to conserve its adaptive capabilities). Recovery of this species can be achieved by addressing the conservation of remaining aquatic and upland habitat that provides essential connectivity, reduces fragmentation, and sufficiently buffers against encroaching development and intensive agricultural land uses. Appropriate management of these areas will also reduce mortality by addressing non-habitat related threats, including those from non-native and hybrid tiger salamanders, other non-native species, contaminants, disease, and road mortality. Research and monitoring should be undertaken to determine the extent of known threats, identify new threats, and reduce threats to the extent possible.

The recovery strategy is intended to establish healthy, self-sustaining populations of Central California tiger salamanders through the protection and management of upland and aquatic breeding habitat, as well as the restoration of aquatic breeding habitat where necessary. It also ensures habitat management and monitoring and the conducting of research. Due to shifting conditions in the ecosystem (e.g., invasive species, unforeseen disease, climate change, and effects from future development and conversion to agriculture), the Service anticipates the need

to adapt actions that implement this strategy over time. The recovery strategy ensures that the genetic diversity of the Central California tiger salamander is preserved throughout the DPS to allow adaptation to local environments, maintenance of evolutionary potential for adaptation to future stresses, and reduction in the potential for genetic drift and inbreeding to result in inbreeding depression.

The range of the Central California tiger salamander has been classified into four recovery units (Service 2017, p. II-1). These recovery units are not regulatory in nature; the boundaries of the recovery units do not identify individual properties that require protection, but they are described solely to facilitate recovery and management decisions. The recovery units represent both the potential extent of Central California tiger salamander habitat within the species' range and the biologically (genetically) distinct areas where recovery actions should take place that will eliminate or ameliorate threats. All recovery units must be recovered to achieve recovery of the DPS.

The four recovery units have been further subdivided into management units. These subdivisions of recovery units are areas that might require different management, that might be managed by different entities, or that might encompass different populations. In the recovery plan, the management units are primarily administrative in that they serve to organize the recovery units into separate and approximately equal areas that will assist in managing the implementation of the recovery actions.

ENVIRONMENTAL BASELINE

The implementing regulations for section 7(a)(2) (50 CFR 402.02) define the environmental baseline as "the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process. The consequences to listed species or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency's discretion to modify are part of the environmental baseline."

Action Area

The implementing regulations for section 7(a)(2) of the Act (50 CFR 402.02) define the "action area" as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. The action area for this biological opinion includes portions of southern Santa Clara County, western Merced County, and northern San Benito County. Project activities that fall within Santa Clara County are covered activities identified in

the SCVHP (ICF International 2012). The project activities within Merced County all occur within existing developed areas and BOR and Valley Water have determined that these activities will not affect listed species.

The San Benito County portion of the SCC is 3.6 miles long in a flat valley at the base of the Diablo Range and runs south of San Felipe Lake. Project activities in San Benito County would occur at 11 vaults along the SCC (see Figure 1 below). The action area includes a 50-foot buffer around the project footprint at each vault and the access route to each project sites, which include maintained access roads and up to one mile for off-road access through agricultural fields to vaults, turnouts, blowouts the conduit crosses and/or discharges into. The action area also includes the receiving water bodies that serve as direct or indirect discharge locations for dewatering. To dewater the conduit, Valley Water will discharge water into receiving waterways, which include Pacheco Creek, Millers Canal, and an agricultural ditch draining to Pajaro River. San Felipe Lake is also a part of the action area as water from pipeline dewater to receiving watercourses may reach the lake.

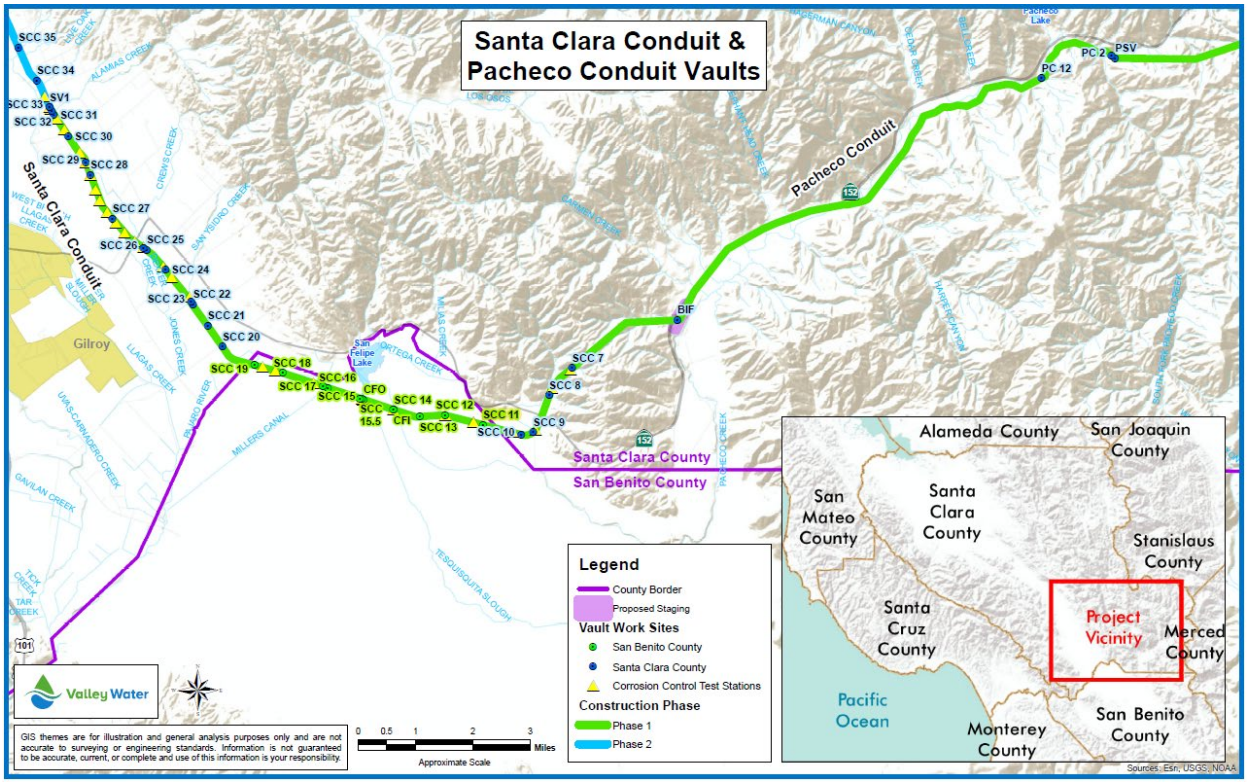

Figure 1. Action area of the Santa Clara Conduit Inspection and Rehabilitation and Pacheco Conduit Sectionalizing Valve and Acoustic Fiber Optic Repair Project.

Habitat Characteristics of the Action Area

In Santa Clara County, project activities are covered activities of the SCVHP. Therefore, we incorporate by reference the action area that has been analyzed in the intra-Service section 7 consultation for the biological opinion for the SCVHP for these activities (Service 2013, p 30). The action area within Merced County occurs within existing developed areas (i.e. existing roads) and on hardened surfaces at the Pacheco Pumping Plant and the Pacheco Sectionalizing Valve.

In San Benito County, the action area is dominated by San Felipe Lake a shallow, turbid sag pond formed by the Calaveras Fault zone that expands in the winter and recedes significantly in the summer. The pastureland surrounding the project area provides natural overflow and drainage to Tequisquita Slough and San Felipe Lake. As such, the pastureland exhibits a high water table through the dry season (BOR 2021). San Felipe Lake has a large population of predatory fish and, when the lake expands and floods the nearby areas, predatory fish have temporally occupied the flooded pastureland and the temporary pools.

The vault sites are comprised of mostly rural and agricultural annual grassland or row crops, interspersed with scattered oaks, shrubs and wetlands. The majority of the project area is heavily used for agriculture, including grazing, orchards, and cultivated row crops. Pacheco Creek, adjacent to vaults SCC 14 and CFI is sparsely vegetated, lacks midstory and understory vegetation. Vault 16 would discharge into Miller Canal, a steep walled canal containing low vegetation and cattails (*Typha* spp.). The canal is surrounded by row crop fields and grazed lands and eventually flows into the Pajaro River. Vault 19 is located adjacent to a low irrigation and agricultural ditch draining to Pajaro River. The vault is located adjacent to a large swale wetland area.

Previous Consultations in the Action Area

The Service (2016) issued a biological opinion to the Corps for activities associated with the San Felipe Pipeline Road/Levee and Culvert Repair Project, a project located on the same road/levee. We determined that the proposed action was not likely to jeopardize the continued existence of San Joaquin kit fox, least Bell's vireo, California red-legged frog, California tiger salamander or result in the adverse modification of California tiger salamander critical habitat.

The Service (2017) conducted emergency informal consultation on the Santa Clara Conduit Calaveras Fault Inlet/Outlet Repair Project for the California red-legged frog, California tiger salamander and its critical habitat, and San Joaquin kit fox.

The Service (2019) issued a biological opinion to BOR for activities associated with the Calaveras Fault Inlet/Calaveras Fault Outlet (CFI/CFO) Culvert Repair Project. We determined that the proposed action was not likely to jeopardize the continued existence of least Bell's vireo,

California red-legged frog, California tiger salamander or result in the adverse modification of California tiger salamander critical habitat.

Condition (Status) of the Species in the Action Area

Information to develop this section includes CNDDB records, reports submitted to the Service, published literature, and surveys completed specifically for this project. A complete description of the survey methods utilized for this project can be found in the biological assessment and its appendices (BOR 2020).

In Santa Clara County, project activities are covered activities of the SCVHP. We incorporate by reference the condition of the California red-legged frog and California tiger salamander from the intra-Service section 7 consultation for the biological opinion for the SCVHP for the action area that occurs with Santa Clara County (Service 2013, pp. 145-151).

California Red-Legged Frog

In San Benito County, the action area is located within the current range of the California red-legged frog, with the nearest locality approximately 2 miles south of the project area and three additional localities within approximately 5 miles of the project area (BOR 2021). However, surveys in and adjacent to the proposed project area in 2003 did not reveal any California red-legged frogs (Rana Resources 2003). The nearest occurrence records for California red-legged frog in CNDDB (2021) (occurrences #39, #47, and #232), are from the 1990s, and depending on the discharge site, they are located approximately 1.9–3.2 miles away (BOR 2021). Three other records for California red-legged frog exist within approximately 5 miles of the project area, lying to the west, northeast and east.

Breeding and non-breeding aquatic habitat and upland habitat are present in and adjacent to the discharge sites. Predators may limit the suitability of the wetlands adjacent to the project for California red-legged frog. San Felipe Lake contains significant populations of predaceous fish and utilized by bullfrogs (Smith 2005, Casagrande 2010). These fish may prey on tadpoles and small metamorphs, possibly precluding successful breeding of California red-legged frogs in these waterbodies (Fisher and Shaffer 1996). American bullfrogs also compete with and prey on California red-legged frogs, the presence of this species threatens the California red-legged frog (Service 1996, 2002).

California red-legged frog foraging and dispersal habitat occur in the action area and because of nearby records of observations, we expect that California red-legged frogs will occur within the action area.

Recovery

The action area is within the Diablo Range and Salinas Valley Recovery Unit (Recovery Unit 6 described in the recovery plan for the California red-legged frog (Service 2002). The action area is within and near the northern boundary of the Santa Clara Valley Core Recovery Area (Core Area 17) within the Diablo Range and Salinas Valley Recovery Unit. Core areas represent a system of areas that, when protected and managed for California red-legged frogs, will allow for long-term viability of existing populations. Conservation needs identified for the Santa Clara Valley Core Area include: protect existing populations; control non-native predators; study effects of grazing in riparian corridors, ponds, and uplands; reduce impacts associated with livestock grazing; protect habitat connectivity; minimize effects of recreation and off-road vehicle use; avoid and reduce impacts of urbanization; and protect habitat buffers from nearby urbanization.

California Tiger Salamander

In San Benito County, the action area is located within the current range of the California tiger salamander, and there are multiple breeding localities within the 1.3-mile dispersal distance of the action area (CNDDB 2021). Depending on the discharge site, there are two to four occurrences of California tiger salamander breeding ponds in CNDDB (Occurrence #s 181-184) within 1.3 miles (BOR 2021). These breeding sites are on the north side of Highway 152 and Pacheco Creek. South of Pacheco Creek, the closest breeding site is over 4 miles away (CNDDB 2021). Rana Associates conducted surveys for California tiger salamander habitat in 2003 and 2006 in the CFI/CFO area, along the SCC near San Felipe Lake before the SCC was dewatered and revealed no evidence of California tiger salamander (BOR 2021). In 2012, H. T. Harvey and Associates conducted larval surveys in nine small ponds along the berm between the CFI and CFO for a previous BOR project (Project 12-070) and did not find California tiger salamander larvae. H. T. Harvey and Associates also conducted preconstruction surveys and monitoring during the replacement of culverts under the CFI/CFO access road in 2016 and did not detect any California tiger salamanders (BOR 2021).

Perennial marsh habitat near SCC 12 and 13, and aquatic habitat along pooled portions of the old Pajaro River alignment, and at the Pajaro River Wetlands Mitigation Bank near SCC 17, 18, and 19, provide suitable aquatic breeding habitat for California tiger salamander. However, predatory fish, bullfrogs, and crayfish are present in these areas and would prey upon early life stages of the California tiger salamander (Shaffer et al. 1993, Seymour and Westphal 1994), and therefore unlikely that California tiger salamander breed in these waterbodies. The CFI is within the riparian corridor of Pacheco Creek. The perennial marshes' water depths and hydroperiods could support breeding by California tiger salamanders; however, fish, bullfrogs, and crayfish are present in these areas and would prey upon early life stages of the California tiger salamander (Shaffer et al. 1993, Seymour and Westphal 1994). Therefore, it is unlikely that California tiger salamanders breed in the perennial marshes. San Felipe Lake's water depths and hydroperiods

could support breeding by California tiger salamander; however, aquatic predatory species are present in the lake as well, which would prey upon early life stages of California tiger salamander. Therefore, it is unlikely that California tiger salamander breed in San Felipe Lake. Although seasonal wetlands are present near some of the other vault and access road locations, ponding in those wetlands is not long or deep enough to support breeding by California tiger salamander.

Upland nonbreeding habitat in the action area includes scattered ground squirrel and gopher burrows (HTH 2012) and potentially spaces within soil and between rocks in the levee berm. Highway 152 and Pacheco Creek may limit dispersal into the action area from the nearest breeding sites to the north and the density of dispersing salamanders would be expected to decrease with distance from this pond (Searcy et al. 2013), though salamanders could also enter the action area from unidentified breeding sites south of this road. Based on this information we believe that the potential exists for terrestrial and larval life stages of the California tiger salamander to occur within the action area, though likely in low numbers if at all. The likelihood of encountering any life stage of the species would be greater during the wet season.

Recovery

In San Benito County, the action area is within the Bay Area Recovery Unit, and within and within the Southwest Diablo Range Management Unit within this Recovery Unit, described in the draft recovery plan for the central California tiger salamander (Service 2017). This recovery unit has a high degree of habitat protection relative to the other recovery units. However, the majority of populations within this recovery unit have not been monitored for population status, trends, and threats. Hybridization with non-native tiger salamanders is a threat to some populations within this recovery unit (Service 2004).

A principal goal for the Bay Area Recovery Unit is the protection of sufficient high quality habitat within all of its constituent management units to ensure sustainable central California tiger salamander populations (recovery criterion A3). Specific protection targets for the 551,730-acre Southwest Diablo Range Management Unit are the creation of 5 preserves totaling at least 16,990 acres. Other conservation needs identified for this and other recovery and management units include reducing or eliminating threats posed by disease, predation, road crossing mortality, contaminants, mosquito control efforts, some livestock grazing practices, and climate change.

EFFECTS OF THE ACTION

The implementing regulations for section 7(a)(2) define effects of the action as “all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is

reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action" (50 CFR 402.02).

In conducting this analysis, we have considered factors such as previous consultations, Federal Register rules, 5-year reviews, conservation agreements, published scientific studies and literature, professional expertise of Service personnel, information obtained from other academic researchers or experts particularly dealing with aspects directly related to the sensitive species involved, and other related documents in determining whether effects are reasonably certain to occur. We have also determined that certain consequences are not caused by the proposed action, such as the increase or spread of disease, poaching, or collecting, because they are so remote in time, or geographically remote, or separated by a lengthy causal chain, so as to make those consequence not reasonably certain to occur.

Project activities in Santa Clara County are covered activities of the SCVHP. The effects to the California red-legged frog and California tiger salamander from these activities were analyzed in the Service's April 2013 *Intra-Service Biological Opinion on Issuance of a Section 10(a)(1)(B) Incidental Take Permit for the Santa Clara Valley Habitat Conservation Plan/Natural Community Conservation Plan* (Service 2013, pp. 52-75,186-189, 193-195), and is hereby incorporated by reference. The project activities within Merced County all occur within existing developed areas and these activities will not affect listed species. Project activities within San Benito County are not SCVHP covered activities and are considered below.

Effects of the Proposed Action on California red-legged frog and California tiger salamander

California red-legged frogs and California tiger salamanders have not been previously observed in the action area in San Benito County, but each species occurs near the project site within their respective dispersal distances. Breeding, non-breeding, and dispersal habitat for each species is present, though the quality of aquatic breeding habitat is likely marginal and the effective quantity of upland non-breeding aestivation habitat (refugia such as small mammal burrows) may be limited.

Project activities in San Benito County are likely to adversely affect all California red-legged frogs and California tiger salamanders that occur in the action area. Work within the action area could result in direct mortality or injury to California red-legged frogs and California tiger salamanders. California red-legged frogs and California tiger salamanders that use the project site for sheltering, foraging, and non-breeding dispersal overland could be displaced during project activities. Such displacement of animals into unfamiliar areas could increase the risk of predation and increase the difficulty of finding required resources such as food and shelter. California red-legged frogs and California tiger salamanders inhabiting the project site and surrounding areas are likely to be subject to disturbance from noise associated with project activities and human presence - these impacts would be temporary. California red-legged frogs

or California tiger salamanders moving from habitat adjacent into the action area could be disturbed by work activities; these individuals could be harassed, injured and/or killed by pedestrians, vehicles, and predators during overland movements.

We expect these impacts would be reduced with implementation of the conservation measures to avoid and minimize temporary and permanent effects to California red-legged frogs and California tiger salamanders. BOR's proposed avoidance measures include dewatering in winter months to avoid impacts and reduce the likelihood of encountering individuals. Demarcating work areas and limiting activities both spatially and temporally to reduce impacts and disturbance, installing fish screens on pumping equipment to prevent the spread of nonnative species, monitoring and controlling dewatering flow rates to avoid erosion, scour and sedimentation, surveying for and relocating amphibians from work areas, and providing information to workers at the project site to workers would reduce these impacts.

Capture and relocation of California red-legged frogs and California tiger salamanders could result in injury or death. BOR proposes to reduce this risk by using Service-approved biologists, limiting the duration of handling, and requiring the proper transport of these species. Although survivorship for translocated California red-legged frogs and California tiger salamanders has not been estimated, survivorship of translocated wildlife in general is reduced due to intraspecific competition, lack of familiarity with the location of potential breeding, feeding, and sheltering habitats, and increased risk of predation.

Effects from Accessing work sites

Workers accessing the pipeline may encounter California red-legged frogs or California tiger salamanders resulting in disturbance, injury, or death of these listed species. Work vehicles could crush California red-legged frogs and California tiger salamanders or collapse burrows being used by these species causing entrapment, injury, or death. Accessing the pipeline within some riparian corridors may result in temporary impacts to riparian vegetation and upland or dispersal habitat for California red-legged frogs or California tiger salamanders. Workers a result of trampling by foot, or direct removal of wetland or woody riparian vegetation. In order to access some locations, Valley Water could temporarily place composite mats to provide access to the pipleline. These mats may displace, entrap, injure, or kill California red-legged frogs or California tiger salamanders.

A Service-approved biologist will survey areas used to access the pipeline to minimize encounters with California red-legged frogs and California tiger salamanders. Valley Water will demarcate work areas and avoid suitable habitat, including all burrows. We anticipate impacts to vegetation to be temporary in nature, meaning it will regrow shortly after the project is complete. Valley Water will minimize vehicle use on unpaved surfaces limiting them to flagged travel corridors. They will limit vehicle speeds to 10 miles per hour on all unpaved surfaces. A qualified biologist will be present during work activities that have the potential to impact

California red-legged frogs and California tiger salamanders (see measure 6) to ensure implementation of avoidance and minimization measures. The qualified biologist has the authority to stopwork if there is threat of harm to listed species or if any measures are not followed. Valley Water will also ensure that all workers present at project sites will have training on the identification and avoidance of California red-legged frogs and California tiger salamanders.

Effects from Dewatering Activities

Increased water flows from dewatering may displace California red-legged frogs or California tiger salamanders. Water released from the conduit may also unintentionally introduce nonnative species into the waterways receiving water. High waterflow may also dislodge and damage California red-legged frog or California tiger salamander egg masses preventing them from developing properly and hatching. Water being discharged into stream, ditches, and other receiving waters has the potential to adversely affect California red-legged frog and California tiger salamander aquatic habitat through erosion, scouring, and sedimentation. Once Valley Water begins dewatering, it will continue until complete resulting in activities during the night or during precipitation events. Activity during these periods have a higher risk of encountering California red-legged frogs or California tiger salamanders. Nighttime lighting and activity could cause temporary avoidance of the area by amphibians.

BOR and Valley Water have implemented conservation measures to avoid and minimize the effects of dewatering as a part of their project. Dewatering will occur during the month of November outside of California red-legged frog and California tiger salamander breeding season avoiding effects to egg masses. Prior to the release of water, a Service-approved biologist will conduct surveys for California red-legged frog and California tiger salamander in the receiving body of water. If adults, eggs, or larvae are found within 100 feet downstream of a release point, the discharge point would not be utilized. If found within 200–500 feet of the release point, Valley Water will implement velocity reduction measures to minimize effects to these individuals and prevent displacement.

Valley Water will prevent erosion at streams by using temporary discharge measures (e.g., visqueen spillways and geotextile bags). Valley Water will use flow-directing fish screens would be temporary installed on top of the dissipaters to direct the discharge flow into the visqueen spillways to prevent erosion and to prevent any aquatic species potentially in the pipeline from entering the streams. Valley Water will minimize impacts to water temperature, dissolved oxygen, flow, and sedimentation impacts during discharge. They will also minimize erosion, scour, sedimentation, and any other impacts to any wildlife species that inhabits or uses project waterways and riparian corridors. Seasonal precipitation typically inundates wetlands during the month of November and additional water added from dewatering would not adversely affect the wetlands with measures to prevent erosion, scour, and sedimentation implemented. All discharge points are adjacent to creeks and we anticipate only minor effects to upland areas from

dewatering. Draining would not affect water levels in a way that would negatively impact riparian trees. Valley Water will minimize effects from nighttime and precipitation event activities by reducing traffic speeds on unpaved surfaces to less than 10 miles per hour during nighttime and precipitation events. Valley Water will limit the use and extent of night lighting to minimize the effects to wildlife including any listed species. A qualified biologist will also be present during all on-site during all dewatering activities to ensure implementation of avoidance and minimization measures are follow and has the authority to stopwork if there is threat of harm to listed species or if any measures are not followed.

Effects of Pipeline Maintenance and Repair

The potential exists for uniformed workers to disturb, injure, harm, or kill California red-legged frogs during pipeline maintenance and repair activities. Trash left during or after project activities could attract predators to the work site, which could in turn prey upon California red-legged frogs and California tiger salamanders. For example, raccoons (*Frocyon lotor*) and feral cats (*Felis catus*) are attracted to trash and also prey opportunistically on the California red-legged frog and California tiger salamander. Accidental spills of hazardous materials or careless fueling or oiling of vehicles or equipment could degrade water quality or upland habitat and result in harm to California red-legged frogs or California tiger salamanders, if present.

Valley Water will avoid and minimize these effects by implementing conservation measures as a part of their project. A Service-approved biologist will survey the work locations prior to the start of work activities. A qualified biologist will remain present at the work site during work activities are taking place with the ability to stop work if a listed species at risk of being harmed or conservation measures are not being implemented. The qualified biologist will also ensure that sensitive habitat for California red-legged frogs and California tiger salamanders, such as burrows, will be flagged and avoided by work activities. Valley Water will educate all workers at the project site about the presence and protected status of California red-legged frog and California tiger salamander. Workers will receive information on how to identify these species and minimize interactions through the implementation of the project's conservation measures. Valley Water will implement measures on properly disposing of trash and debris so that they do not attract potential predators to the project site. Valley Water will implement conservation measures to ensure the proper storage and spill protections for hazardous materials and other hazards to listed species.

In summary, the proposed action could adversely affect California red-legged frogs and California tiger salamanders. However, BOR and Valley Water have proposed avoidance and minimization measures to reduce these impacts. Based on these measures, the absence of either species in the action area in prior surveys, and the temporary nature of all impacts, we anticipate that few California red-legged frogs and California tiger salamanders are likely to be killed or injured during work activities.

Effects on Recovery

California red-legged frog

We anticipate that effects on recovery of the California red-legged frog will be minimal. As stated above in the Status of the Species in the Action Area section, the action area lies within the Diablo Range and Salinas Valley Recovery Unit and within the Santa Clara Valley Core Recovery Area. The proposed project would not increase the threats currently impacting the California red-legged frog in this recovery unit or core area as identified in the recovery plan and described above, or preclude the Service's ability to implement recovery actions (Service 2002). Project impacts would be temporary, affect a very small area (2.5 acres) of suitable habitat within the 54,670-acre Santa Clara Valley Core Area, and with implementation of the conservation measures would result in minimal change in population numbers and distribution. No long-term effects to the species or to recovery are expected as a result of the proposed project activities.

California tiger salamander

We anticipate that effects on recovery of the central California tiger salamander will be minimal. As stated above in the Status of the Species in the Action Area section, the action area lies within the Bay Area Recovery Unit and within the Southwest Diablo Range Management Unit. The proposed project would not increase the threats currently impacting the central California tiger salamander in this recovery unit or management unit as identified in the draft recovery plan and described above, or preclude the Service's ability to implement recovery actions (Service 2017). Project impacts would be temporary, affect a very small area (2.5 acres) of suitable habitat within the 551,730-acre Southwest Diablo Range Management Unit, and with implementation of the conservation measures would result in minimal change in population numbers and distribution. No long-term effects to the species or to recovery are expected as a result of the proposed project activities.

Summary of Effects

Project activities in San Benito County effect a very small area and are temporary in nature. BOR and Valley Water have not proposed to mitigate these effects. For project activities within Santa Clara County, the SCVHP utilizes a variety of development-based fees to fund mitigation that will offset losses of land cover types, covered species habitat, and other biological values. Valley Water will pay all applicable development fees to the Santa Clara Valley Habitat Agency identified in the Development Fee Table (Table 9-6) and described in Chapter 9.4.1 of the SCVHP (updated fee schedules are available at http://scv-habitatagency.org/206/Habitat-Agency-Fee-Schedule). The memorandum from Valley Water "Section 7 Consultation: SCC Inspection and Rehabilitation and Pacheco Sectionalizing Valve and Acoustic Fiber Optic Repair Project" describes the development based fees that Valley Water will provide to offset their

permanent and temporary impact as a result of the project effects (Valley Water 2021, Attachment 5, pp. 32-33). Overall, because impacts are small within San Benito County and as described above, the applicant will implement conservation measures, including mitigation, as described in the SCVHP, we anticipate no long-term effects to the overall population, breeding and reproductive capacity, and recovery of the California red-legged frog or California tiger salamander due to BOR's proposed action

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. We do not consider future Federal actions that are unrelated to the proposed action in this section because they require separate consultation pursuant to section 7 of the Act. Foreseeable actions related to the Santa Clara Conduit in San Benito County would fall under a Federal nexus with BOR and any future projects on these lands would be subject to separate section consultation.

Activities on private agricultural and grazing lands adjoining the levee right-of-way could affect California red-legged frogs or California tiger salamanders, which could be subject to disturbance and harm from routine farming activities. Non-native bullfrogs, crayfish, and fish in privately owned San Felipe Lake likely move into aquatic habitats in the action area during wet years and seasons, and may predate California red-legged frogs and California tiger salamanders.

CONCLUSION

The regulatory definition of "to jeopardize the continued existence of the species" focuses on assessing the effects of the proposed action on the reproduction, numbers, and distribution, and their effect on the survival and recovery of the species being considered in the biological opinion. For that reason, we have used those aspects of the California red-legged frogs and California tiger status as the basis to assess the overall effect of the proposed action on the species.

The Service's consultation on the issuance of the ITP for the SCVHP concludes the effects of the implementing the SCVHP, including all measures to avoid, minimize, and mitigate adverse effects is not likely to jeopardize the continued existence of the California tiger salamander and California red-legged frog, which we incorporate by reference (Service 2013, p. 203). Additionally, we consider the following effects to California red-legged frog and California tiger salamander within San Benito County below.

California red-legged frog

Reproduction

Construction activities in upland habitat could injure or kill adult California red-legged frogs remaining in burrows or dispersing through the project area. Dewatering activities and work conducted in or adjacent to wetland and aquatic habitats could harm any life stage of the California red-legged frog if using these areas for breeding, and temporarily degrade or reduce available breeding habitat. The loss of reproductive individuals, larvae, and breeding habitat could temporarily lower the reproductive capacity of the local population. However, we expect such impacts to be small due to the absence of the species in prior surveys, small area and brief duration of impacts, presence of non-native predators in available aquatic habitat, and measures BOR has proposed to protect California red-legged frogs, which include working outside of the breeding season, avoiding wetland habitats, and surveying for and relocating California red-legged frogs from the work area. Therefore, we expect the proposed project to result in minimal impacts to breeding California red-legged frogs within San Benito County and conclude that the proposed action will not appreciably reduce the reproduction of the species locally or rangewide.

Numbers

A small number of California red-legged frogs may be injured or killed because of work activities and capture and relocation efforts. Although localities occur within dispersal distance of the action area, the number of California red-legged frogs present in the action area are expected to be low, because the species has not been recorded during prior surveys and various non-native predators have been observed in aquatic habitats in the action area. The short duration of the project and the range of conservation measures proposed by BOR will minimize the number of California red-legged frogs lost as a result of project activities. Therefore, we conclude that the loss of the small number of individuals, if any, which may occur during the proposed action would not appreciably reduce the local or rangewide population of the California red-legged frog.

Distribution

The proposed project could injure, kill, or temporarily displace a small number of California red-legged frogs, but the species has not been observed previously in the action area and BOR has proposed conservation measures to minimize the risk of adverse effects on individuals. Construction activities may remove a small amount of upland sheltering habitat and temporarily impact aquatic habitat, but most areas affected by the project would return to their previous condition and habitat value. The project would affect a small proportion of the California red-legged frog habitat available in the local vicinity and an even smaller proportion of the habitat

available in the species' geographic range. Therefore, we conclude that the proposed action will not appreciably reduce the distribution of the California red-legged frog at the local or rangewide level.

Conclusion for California red-legged frog

After reviewing the current status of California red-legged frogs, the environmental baseline for the action area, the effects of the proposed authorization of Valley Water's inspection, maintenance, repair, and replacement activities and the cumulative effects, it is the Service's biological opinion that BOR's authorization of Valley Water's inspection, maintenance, repair, and replacement activities, as proposed, is not likely to jeopardize the continued existence of the California red-legged frogs because:

1. The project would have a low effect on reproduction of the species, but would not appreciably reduce reproduction of the species rangewide.
2. The project would cause a low decrease in the number of individuals.
3. The project would not reduce the species' distribution rangewide.
4. The project would not cause any effects that would preclude our ability to recover the species.

California tiger salamander

Reproduction

Construction activities in upland habitat could injure or kill adult California tiger salamanders remaining in burrows or dispersing through the project area. Dewatering activities and work conducted in or adjacent to wetland and aquatic habitats could harm any life stage of the California tiger salamander if using these areas for breeding, and temporarily degrade or reduce available breeding habitat. The loss of reproductive individuals, larvae, and breeding habitat could temporarily lower the reproductive capacity of the local population. However, we expect such impacts to be small due to the absence of the species in prior surveys, the small area and brief duration of impacts, presence of non-native predators in aquatic habitat, and measures BOR has proposed to protect California tiger salamanders. These measures include working outside of the breeding season, avoiding wetland habitats, and surveying for and relocating California tiger salamanders from the work area. Therefore, we expect the proposed project to result in minimal impacts to breeding California tiger salamanders and conclude that the project will not appreciably reduce the reproduction of the species locally or rangewide.

Numbers

A small number of California tiger salamanders may be injured or killed as a result of construction activities and capture and relocation efforts. Although ten breeding localities occur

within 5 miles of the action area including two within the species' dispersal distance, the number of California tiger salamanders present in the action area is expected to be low, because the species has not been recorded during prior surveys and various non-native predators have been observed in aquatic habitats in the action area. The short duration of the project, small area of impacts, and range of conservation measures proposed by BOR will minimize the number of California tiger salamanders lost as a result of project activities. Therefore, we conclude that the loss of the small number of individuals, if any, which may occur during the proposed action would not appreciably reduce the local or rangewide population of the California tiger salamander central population.

Distribution

The proposed project could injure, kill, or temporarily displace a small number of California tiger salamanders, but the species has not been observed previously in the action area and BOR has proposed conservation measures to minimize the risk of adverse effects on individuals. Construction activities may remove a small amount of upland aestivation habitat and temporarily impact aquatic breeding habitat, but most areas affected by the project would return to their previous condition and habitat value. The project would affect a small proportion of the California tiger salamander habitat available in the local vicinity and an even smaller proportion of the habitat available in the Central population's relatively large geographic range. Therefore, we conclude that the proposed action will not appreciably reduce the distribution of the species at the local or rangewide level.

Recovery

The action area lies within the Southwest Diablo Range Management Unit of the Bay Area Recovery Unit for the central population of the California tiger salamander. The action area includes a small area of suitable habitat, and project impacts to California tiger salamanders would be largely temporary and minimized by the proposed conservation measures. The proposed action would not increase the threats currently impacting the California tiger salamander in this Recovery Unit or Management Unit and would not preclude the Service's ability to implement any of the measures identified in the draft recovery plan for the species.

Conclusion for California tiger salamander

After reviewing the current status of California tiger salamander, the environmental baseline for the action area, the effects of the proposed authorization of Valley Water's inspection, maintenance, repair, and replacement activities and the cumulative effects, it is the Service's biological opinion that BOR's authorization of Valley Water's inspection, maintenance, repair, and replacement activities, as proposed, is not likely to jeopardize the continued existence of the California tiger salamander because:

1. The project would have a low effect on reproduction of the species, but would not appreciably reduce reproduction of the species rangewide.
2. The project would cause a low decrease in the number of individuals.
3. The project would not reduce the species' distribution rangewide.
4. The project would not cause any effects that would preclude our ability to recover the species.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened wildlife species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not the purpose of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The Santa Clara County portion of this project are covered activities in the SCVHP. The take of the California red-legged frog and California tiger salamander, resulting from project activities in Santa Clara County is authorized through the SCVHP's incidental take permit (ITP; Fish and Wildlife Permit No.: TE-94345A-0). Additionally, the Service's biological opinion for the issuance of the ITP provides take limits for the California red-legged frog and California tiger salamander for the proposed activities conducted within the action area in Santa Clara County, and is hereby incorporated by reference (Service 2013, pp. 254-255).

AMOUNT OR EXTENT OF TAKE

California red-legged frog and California tiger salamander

We anticipate that some California red-legged frogs and California tiger salamanders could be taken as a result of the proposed action in San Benito County. We expect the incidental take to be in the form of capture during relocation activities and harm, injury, or death because of project activities if they are accidentally injured or killed during capture and relocation or are unable to be collected for relocation away from work activities. The probability of these risks may be increased if substantial rainfall (greater than 0.5 inch of rain in a 24-hour period) occurs, and California red-legged frogs and/or California tiger salamanders are dispersing through the area during work activities. California red-legged frogs and California tiger salamanders could

also be killed or wounded by predators if they abandon habitat within or adjacent to work areas and be subject to desiccation if they leave shelter sites.

We anticipate that all California red-legged frogs and California tiger salamanders would be captured and relocated out of harm's way, if needed, by the Service-approved biologist. We believe that the benefits of relocation (i.e., minimizing mortality or injury) outweigh the risks associated with capture.

We cannot quantify the precise number of California red-legged frogs or California tiger salamanders that may be taken as a result of BOR's proposed action because both species move over time; for example, animals may have entered or departed the action area since the time of pre-construction surveys. California red-legged frogs and California tiger salamanders may be difficult to detect due to their small body size and use of aquatic habitats, underground burrows, or dense cover. Animals injured or killed during translocation efforts are likely to be observed; however, mortality from other sources, including the indirect effects of translocation (e.g., unable to find food in a new location) or displacement from the action area, would be difficult to observe. Finding a dead or injured California red-legged frog or California tiger salamander may also be unlikely due to their cryptic coloration and potential to be quickly scavenged. The protective measures proposed by BOR and Valley Water are likely to prevent mortality or injury of most individuals.

Consequently, we are unable to reasonably anticipate the actual number of California red-legged frogs or California tiger salamanders that would be taken by the proposed project; however, we must provide a level at which formal consultation would have to be reinitiated. The Environmental Baseline and Effects Analysis sections of this biological opinion indicate that we expect few, if any, California red-legged frogs or California tiger salamanders to be observed in the action area, and that adverse effects to these species would likely be low given the nature of the proposed activities. Therefore, we anticipate that take of California red-legged frogs and California tiger salamanders would also be low. We also recognize that for every California red-legged frog or California tiger salamander found dead or injured, other individuals may be killed or injured that are not detected, so when we determine an appropriate take level we are anticipating that the actual take would be higher and we set the number below that level.

Therefore, if 2 adult, 2 juvenile or 2 larval California red-legged frogs, or 2 adult, 2 juvenile or 2 larval California tiger salamanders are found dead or wounded, BOR must contact our office immediately to reinitiate formal consultation. Project activities that are likely to cause additional take should cease during this review period because the exemption provided under section 7(o)(2) would lapse and any additional take would not be exempt from the section 9 prohibitions.

REASONABLE AND PRUDENT MEASURES

The measures described below are non-discretionary and must be undertaken by the BOR or made binding conditions of any grant or permit issued to Valley Water, as appropriate, for the exemption in section 7(o)(2) to apply. The BOR has a continuing duty to regulate the activity covered by this incidental take statement. If the BOR (1) fails to assume and implement the terms and conditions or (2) fails to require the Valley Water to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the BOR or Valley Water must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR 402.14(i)(3)].

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize the impacts of incidental take of California red-legged frog and California tiger salamander:

1. Biologists must be authorized by the Service before they implement conservation measures for the California red-legged frog and California tiger salamander, including but not limited to conducting surveys, excavating burrows, and capturing and relocating individuals.

2. The Service must be notified of the initiation of project activities and provided access to the project site upon request.

TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the Act, BOR must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline reporting and monitoring requirements. These terms and conditions are non-discretionary.

1. The following terms and conditions implement reasonable and prudent measure 1:

    a. A Service-approved biologist will determine if a California red-legged frog or California tiger salamander is unable to move from the project site under its own volition (measure 9.c.). In these instances, the biologist will capture and relocate these animals the shortest distance possible to a location that contains suitable habitat and that would not be affected by project activities. The relocation site should be in the same drainage to the extent practicable.

    b. BOR or Valley Water must request our approval of any biologists that they or their contractors employ to implement conservation measures associated with the

California red-legged frog and California tiger salamander at least 14 days prior to any such activities being conducted. Such requests must be communicated by electronic and sent to fw8venturasection7@fws.gov. Please be advised that possession of a 10(a)(1)(A) recovery permit for the California red-legged frog or California tiger salamander does not substitute for the implementation of this measure. Authorization of Service-approved biologists is valid for this project only.

c. Prior to the onset of any project related activities, the Service-approved biologist must identify appropriate locations to receive California red-legged frogs and California tiger salamanders from the project area in the event that they need to be relocated. These locations must be in proximity to the project site, contain suitable habitat, not be affected by project activities, and be free of exotic predatory species (i.e., bullfrogs, crayfish) to the best of the approved biologist's knowledge.

d. If any life stages of the California red-legged frog or California tiger salamander are identified in the action area that are completely dependent on water, such as egg masses, tadpoles, or larvae, work must immediately cease and the Service-approved biologist must promptly contact the Service to determine the best procedure to continue minimizing adverse effects to the species.

2. The following terms and conditions implement reasonable and prudent measure 2:

a. BOR and Valley Water must provide the Service access to the action area to survey and inspect project activities.

b. BOR and Valley Water must notify the Ventura Fish and Wildlife Office via electronic mail (fw8venturasection7@fws.gov) prior to conducting project activities pursuant to this biological opinion.

REPORTING REQUIREMENTS

For all project activities covered by the SCVHP and occurring within Santa Clara County: BOR and Valley Water will follow the reporting requirements outlined in the SCVHP (ICF International 2012).

For project activities that take place in San Benito County: pursuant to 50 CFR 402. l4(i)(3), BOR must report the progress of the action and its impact on the species to the Service as specified in this incidental take statement to the Service's Ventura Fish and Wildlife Office (2493 Portola Road, Suite B, Ventura, California 93003) within 90 days following completion of the proposed project. The report will be sent to fw8venturasection7@fws.gov.

BOR has specified that Valley Water will prepare and submit a final report to BOR and the Service documenting compliance with the above measures and reporting all impacts to the species. The report must describe all activities that were conducted under this biological opinion, including activities that were described in the proposed action and required under the terms and conditions, and discuss any problems that were encountered in implementing conservation measures or terms and conditions and any other pertinent information. The report must also include the following information:

> The number of California red-legged frogs and California tiger salamanders found, captured and relocated from the project area, and killed or injured during project activities; the dates and times of capture, mortality, or injury; specific locations of capture, mortality, or injury; approximate size and life stage of individuals; and a description and map of relocation sites.

The Service recognizes that Valley Water may author the report(s) described above. However, BOR must review the report(s) to determine compliance with the Terms and Conditions of this biological opinion prior to submitting them to the Service. Upon completion of the project, BOR or SCVWD must report all observations of federally listed species to CDFW for inclusion in the CNDDB.

DISPOSITION OF DEAD OR INJURED SPECIMENS

As part of this incidental take statement and pursuant to 50 CFR 402.14(i)(1)(v), upon locating a dead or injured California red-legged frogs and California tiger salamanders, initial notification within 3 working days of its finding must be made by telephone and in writing to the Ventura Fish and Wildlife Office (805-644-1766). The report must include the date, time, location of the carcass, a photograph, cause of death or injury, if known, and any other pertinent information.

BOR or Valley Water must take care in handling injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible state. The BOR or Valley Water must transport injured animals to a qualified veterinarian. Should any treated California red-legged frogs and California tiger salamanders survive, the BOR or Valley Water must contact the Service regarding the final disposition of the animal(s).

We recommend that dead California red-legged frogs and California tiger salamanders identified in the action area be tested for amphibian disease, and that dead California tiger salamanders undergo genetic analysis for the purpose of investigating hybridization; however, this recommendation is discretionary and to be determined by BOR upon contacting the Ventura Fish and Wildlife Office at the discovery of a dead California red-legged frog or California tiger salamander. If BOR chooses not to submit dead California red-legged frogs or California tiger salamanders for testing, they must be placed with the California Academy of Sciences; Contact: Jens Vindum, Collections Manager, California Academy of Sciences Herpetology Department,

Golden Gate Park, San Francisco, California 94118, (415) 750-7037. Any least Bell's vireos found dead must be provided to the Western Foundation of Vertebrate Zoology; Contact: Rene Corado, Collections Manager, Western Foundation of Vertebrate Zoology, 439 Calle San Pablo, Camarillo, California 93012, (805) 388-9944.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. We recommend that the Service-approved biologist(s) relocate any other native reptiles or amphibians found within work areas to suitable habitat outside of project areas if such actions are in compliance with State laws.

2. We recommend that dead California red-legged frogs and California tiger salamanders identified in the action area be tested for amphibian disease, and that dead California tiger salamanders undergo genetic analysis for the purpose of investigating hybridization.

3. We recommend that BOR investigate the efficacy of capturing and moving California red-legged frogs and California tiger salamanders to determine if use of this measure reduces adverse effects of project actions on these species, including collecting information on repeat capture and behavior of individuals post-movement.

4. As a Federal agency subject to section 7(a)(1) of the Act, BOR should require mitigation from applicants to promote the conservation of all federally listed species. The mitigation should not only offset the effects of the proposed action but promote the recovery of listed species. We are available to assist you in developing appropriate mitigation or you may use the Service's recovery plans and 5-year reviews where we outline actions needed to promote conservation of listed species. The Act defines "conservation" as "to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary."

The Service requests notification of the implementation of any conservation recommendations so we may be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats.

REINITIATION NOTICE

This concludes formal consultation on the action(s) outlined in the request. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, the exemption issued pursuant to section 7(o)(2) may have lapsed and any further take could be a violation of section 4(d) or 9. Consequently, we recommend that any operations causing such take cease pending reinitiation.

If you have any questions about this biological opinion, please contact Joseph Brandt of my staff by electronic mail at joseph_brandt@fws.gov.

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